

**CONTRACT DOCUMENTS AND SPECIFICATIONS
FOR THE HYDRAULIC DREDGING OF
SHIPSHEWANA LAKE**

LOCATED IN

SHIPSHEWANA, INDIANA

For the

**Shipshewana Lake Community Improvement Association
3485 North 980 West
Shipshewana, Indiana 46565**

CONTRACT #1 - HYDRAULIC DREDGING

March 6, 1998



Dr. Frank X. Browne, P.E.

**Prepared by:
F. X. Browne, Inc.
1101 South Broad Street
Lansdale, PA 19446**

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ADVERTISEMENT FOR BIDS
SHIPSHEWANA COMMUNITY LAKE IMPROVEMENT ASSOCIATION
SHIPSHEWANA LAKE RESTORATION PROJECT:
HYDRAULIC DREDGING
LAGRANGE COUNTY, INDIANA

NOTICE IS HEREBY GIVEN that the Shipshewana Community Lake Improvement Association, LaGrange County, Indiana will receive sealed bids for the hydraulic dredging of Shipshewana Lake.

Separate sealed BIDS for the hydraulic dredging of Shipshewana Lake will be received by Shipshewana Community Lake Improvement Association, 3485 North 980 West, Shipshewana, Indiana 46565 until 3:00 PM, March 28, 1998. Bids received after such hours may be returned unopened.

The Project shall consist of the hydraulic dredging and mechanical dewatering of approximately 250,000 cubic yards of accumulated sediment according to the specified dredging plan.

The CONTRACT DOCUMENTS may be examined at the Shipshewana Community Lake Improvement Association office, 3485 North 980 West, Shipshewana, Indiana 46565. Copies of the CONTRACT DOCUMENTS may be obtained from the office of F. X. Browne, Inc., 1101 South Broad Street, Lansdale, PA 19446 upon payment of a non-refundable fee of \$50 for each set. Requests for Plans and Specification must include a return street address; post office boxes are not acceptable. Partial sets of plans and/or specifications are not available. Copies of any and all addenda which may be issued for this Project shall be included with the purchased documents or shall be forwarded to all plan and specification holders.

A conditional or qualified Bid will not be accepted. A pre-bid meeting will not be held. Contractors can call Michael Martin, President, Shipshewana Lake Community Improvement Association at (219) 768-4541 to schedule a field visit. Each Bidder is responsible for inspecting the Project site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to its Bid.

**SHIPSHEWANA COMMUNITY LAKE
IMPROVEMENT ASSOCIATION**
Michael Martin, President

INFORMATION FOR BIDDERS

BIDS will be received by Shipshewana Community Lake Improvement Association, herein called the OWNER, at 3485 North 980 West, Shipshewana, Indiana 46565 until 3:00 pm, March 28, 1998, and then at said location publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to Shipshewana Community Lake Improvement Association at 3485 North 980 West, Shipshewana, Indiana 46565. Each sealed envelope containing a BID must be plainly marked on the outside as BID for the Shipshewana Lake Restoration Project - Hydraulic Dredging and the envelope should bear on the outside the name of the BIDDER, his address, his license number, if applicable and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER at 3485 North 980 West, Shipshewana, Indiana 46565.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID bond payable to the OWNER for five percent of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the PAYMENT BOND and PERFORMANCE BOND have been executed and approved, after which it will be returned. A certified check may be used in lieu of a BID BOND.

A PERFORMANCE BOND and a PAYMENT BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the PERFORMANCE BOND and PAYMENT BOND within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary AGREEMENT and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the AGREEMENT was awarded shall sign the AGREEMENT and return to such party an executed duplicate of the AGREEMENT. Should the OWNER not execute the AGREEMENT within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed AGREEMENT. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within ten (10) days of the execution of the AGREEMENT by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the AGREEMENT without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the AGREEMENT and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the SUPPLEMENTAL GENERAL CONDITIONS.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER.

BID

Proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____ doing business as _____. * To the Shipshewana Community Lake Improvement Association (hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of the Shipshewana Lake Restoration Project: Hydraulic Dredging in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT prior to December 31, 1998. BIDDER further agrees to pay as liquidated damages, the sum of \$250 for each consecutive calendar day thereafter as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDA:

*Insert "a corporation", "a partnership", or "an individual" as applicable.

BID

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sum:

BID SCHEDULE

NOTE: BIDS shall include sales tax and all other applicable taxes and fees.

No.	Description	Unit	Unit Price	Quantity	Total Price
A	Mobilization and Closeout	L.S.	L.S.	L.S.	
B	Site Preparation	L.S.	L.S.	L.S.	
C	Hydraulic Dredging	CY	_____/CY	250,000 CY	
D	Dredge Return Water Line	LF	_____/LF	700 LF	
E	Sediment Dewatering	CY	_____/CY	250,000 CY	
F	Earthwork	L.S.	L.S.	L.S.	
G	Erosion and Sediment Controls	L.S.	L.S.	L.S.	
H	Construction Access Road	LF	_____/LF	1100 LF	

TOTAL OF BID.....\$ _____

LUMP SUM PRICE (if applicable).....\$ _____

Respectfully submitted:

_____ Signature	_____ Address
_____ Title	_____ Date

License Number (if applicable)

(SEAL-if BID is by a corporation)

Attest _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as Principal, and
_____ as Surety, are hereby
held and firmly bound unto _____ as OWNER
in the penal sum of _____
for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves,
successors and assigns.

Signed, this _____ day of _____, 19 _____.

The Condition of the above obligation is such that whereas the Principal has submitted
to _____ a certain BID,
attached hereto and hereby made a part hereof to enter into a contract in writing, for the

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract
in the Form of Contract attached hereto (properly completed in accordance with said
BID) and shall furnish a BOND for his faithful performance of said contract, and for
the payment of all persons performing labor or furnishing materials in connection
therewith, and shall in all other respects perform. the agreement created by the
acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being
expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall,
in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal (L.S.)

Surety

By: _____

IMPORTANT-Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 19 __, by and between the Shipshewana Community Lake Improvement Association, hereinafter called the "OWNER" and _____ doing business as (an individual,) or (a partnership,) or (a corporation) hereinafter called the "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of the Shipshewana Lake Restoration Project: Hydraulic Dredging and Disposal of Dredged Sediment, hereinafter called the "PROJECT". The project shall consist of, but is not limited to, the hydraulic dredging and mechanical dewatering of approximately 250,000 cubic yards of accumulated sediment according to the specified dredging plan, and all other work as described in the Specifications and shown on the Plans.
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will complete the same prior to December 31, 1998 unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ _____, or as shown in the BID schedule.
5. The term "CONTRACT DOCUMENTS" means and includes the following:
 - (A) ADVERTISEMENT FOR BIDS
 - (B) INFORMATION FOR BIDDERS
 - (C) BID
 - (D) BID BOND
 - (E) AGREEMENT
 - (F) GENERAL CONDITIONS
 - (G) SUPPLEMENTAL GENERAL CONDITIONS
 - (H) PAYMENT BOND
 - (I) PERFORMANCE BOND
 - (J) NOTICE OF AWARD
 - (K) NOTICE TO PROCEED

(L) CHANGE ORDER

(M) DRAWINGS prepared by F.X. Browne, Inc., Lansdale, Pennsylvania; entitled Shipshewana Lake Restoration Project - Hydraulic Dredging numbered 1 of 1 through 1 of 7 , and dated March 2, 1998.

(N) SPECIFICATIONS prepared or issued by F.X. Browne, Inc., Lansdale, Pennsylvania; dated March 6, 1998.

(O) ADDENDA:

No. _____ , dated _____ , 19 _____

No. _____ , dated _____ , 19 _____

No. _____ , dated _____ , 19 _____

No. _____ , dated _____ , 19 _____

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (_____) each of which shall be deemed an original on the date first above written.

(Number of Copies)

OWNER:

BY _____

Name _____

(Please Type)

Title _____

(SEAL)

ATTEST:

Name _____

(Please Type)

Title _____

CONTRACTOR:

BY

Name

(Please Type)

Address

(SEAL)

ATTEST:

Name

(Please Type)

GENERAL CONDITIONS

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work
17. Subsurface Conditions
18. Suspension of Work, Termination and Delay
19. Payments to Contractor
20. Acceptance of Final Payment as Release
21. Insurance
22. Contract Security
23. Assignments
24. Indemnification
25. Separate Contracts
26. Subcontracting
27. Engineer's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Arbitration
31. Taxes

1. DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA-Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

1.3 BID-The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER-Any person, firm or corporation submitting a BID for the WORK.

1.5 BONDS-Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS,

1.6 CHANGE ORDER-A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS-The contract, including Advertisement For Bids, Information For Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE-The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME-The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.10 CONTRACTOR-The person, firm or corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS-The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

1.12 ENGINEER-The person, firm or corporation named as such in the CONTRACT DOCUMENTS.

1.13 FIELD ORDER-A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

1.14 NOTICE OF AWARD-The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.

1.15 NOTICE TO PROCEED-Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.16 OWNER-A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the WORK is to be performed.

GENERAL CONDITIONS

1.17 PROJECT-The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.18 RESIDENT PROJECT REPRESENTATIVE-The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

1.19 SHOP DRAWINGS-All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

1.20 SPECIFICATIONS-A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.21 SUBCONTRACTOR-An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22 SUBSTANTIAL COMPLETION-That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

1.23 SUPPLEMENTAL GENERAL CONDITIONS-Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24 SUPPLIER-Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 WORK-All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26 WRITTEN NOTICE-Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

2. *ADDITIONAL INSTRUCTIONS AND DETAIL DRAWING*

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus Supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. *SCHEDULES, REPORTS AND RECORDS*

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and, as applicable:

3.2.1. The dates at which special detail drawings will be required; and

3.2.2. Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

4. *DRAWINGS AND SPECIFICATIONS*

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWING and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. *SHOP DRAWINGS*

GENERAL CONDITIONS

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of them WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, SUPPLIES or its or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained seller.

7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with general accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK Specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests or approvals by the engineer or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and his representatives will at all times have access to the WORK. In addition authorized representatives and agents of any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested others, the CONTRACTOR, at the ENGINEER'S request will uncover, expose or otherwise make available observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question furnishing all necessary labor, materials, tools, a equipment. If it is found that such WORK is defective the CONTRACTOR will bear all the expenses of so uncovering, exposure, observation, inspection a testing and of satisfactory reconstruction. If, however such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

GENERAL CONDITIONS

8. SUBSTITUTIONS

8.1 Whenever a material, article or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the Substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to this specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9. PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims of infringement of any patent right and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Engineer.

10. SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stake for pile locations and other working points, lines, elevations and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13. CHANGES IN THE WORK changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

11. PROTECTION OF WORK, PROPERTY AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, and SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety or persons or the WORK or property at he site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. He will give the ENGINEER prompt WRITTEN NOTICE of any insignificant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE

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ORDER shall thereupon be issued covering the changes and deviations involved.

WORK to cover the cost of general overhead and profit.

12. SUPERVISION BY CONTRACTOR

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be its as binding as if given to the CONTRACTOR. The Supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

13.1 The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME, or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis - for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14. CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

- (a) Unit prices previously approved.
- (b) An agreed lump sum.
- (c) The actual cost for labor, direct overhead, materials supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT time for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACT has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.4.1 To any preference, priority or allocation order duly issued by the OWNER.

15.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACTOR DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other

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CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily, encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or

equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extend-

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ing the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or extension of the CONTRACT TIME, or both, shall made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. PAYMENTS TO CONTRACTOR

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis materials and equipment not incorporated in WORK but delivered and suitably stored at or near site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to OWNER, as will establish the OWNER's title to the material and equipment and protect his interest therein including applicable insurance. The ENGINEER, within ten (10) days after receipt of each partial payment estimate, shall either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons refusing to approve payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within ten (10) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the proved partial payment estimate. The OWNER shall retain ten (10) percent of the amount of each payment till final completion and acceptance of all work covered by the CONTRACT DOCUMENTS. The OWNER at time, however, after fifty (50) percent of the WORK has been completed, if he finds that satisfactory progress is being made, shall reduce retainage to five percent on the current and remaining estimates. When the WORK is substantially complete (operations beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the WORK on which price is stated separately in the CONTRACT DOCUMENTS, payment may be made in full, including retained percentages, less authorized deductions.

19.2 The request for payment may also include, allowance for the cost of such major materials equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishes of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

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20. ACCEPTANCE OF FINAL PAYMENTS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

21. INSURANCE

21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverage afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

21.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified;

21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$200,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$200,000 aggregate for any such damage sustained by two or more persons in any one accident.

21.3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

21.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the

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CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER, and the OWNER.

22. CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by CONTRACTOR of all undertakings, covenants, terms, conditions, and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on the Federal Bonds" as published in the Treasury Department of Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is remove from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum signed by such other surety or sureties as may be satisfactory to the OWNER. The premium on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims damages, losses, and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom: and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR or SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In find, and all claims against the OWNER or the ENGINEER or ANY of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that renders it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3 If the Performance of additional WORK by other CONTRACTORS or the OWNERS is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT written notice thereof shall given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or other involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

26. SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal circumstances practices, are performed by specialty SUBCONTRACTORS.

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26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s) in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he for the acts and omissions of persons directly employed by him.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontractors relative to the WORK to bind SUBCONTRACTORS to the CONTRACT by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under the provision of the CONTRACT DOCUMENTS.

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

27.3 The ENGINEER will not be responsible for construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY

28.1 Prior to issuance of NOTICE TO PROCEED the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at his expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTEE

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. ARBITRATION

30.1 All claims, disputes and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Section 20, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

30.2 Notice of the demand for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and with the American Arbitration Association, and a copy shall be filed with the ENGINEER. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

31. TAXES

31.1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

SPECIAL REQUIREMENTS

1. Application of Special Requirements

Items listed in these Special Requirements are specific to this project. They replace, add-to or amend the Information for Bidders, General Conditions, Supplementary Conditions and/or the General Construction Specifications. Whenever conditions as set forth in any of the Specifications conflict with conditions of other Sections of the Specifications, the following order of precedence shall apply:

- a. Special Requirements
- b. Supplementary Conditions
- b. General Conditions
- C. Information for Bidders
- d. Construction Specifications

2. Definitions

In the case of this Project, the OWNER is the Shipshewana Community Lake Improvement Association, LaGrange County, Indiana, and the ENGINEER is F. X. Browne, Inc., of Lansdale, Pennsylvania.

3. Federal Grants and Loans

This Project will be financed in part by a grant from the Indiana Department of Natural Resources and in part by local funds.

4. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or other classification, must show approval of either EPA or USDA- Use of all such chemicals and disposal of residues shall be in conformance with instructions.

5. Existing Utilities

Existing utilities in the Project site are as follows: There are no known existing utilities within the Project site.

6. Hazard Communication Standard

Pursuant to the Code of Federal Regulations, 29 CFR Part 1926, as may be amended, all CONTRACTORS, SubCONTRACTORS and materials suppliers on this Project shall provide access to all persons on the job site at all times the Material Safety Data Sheets (MSDS) for all hazards of all chemicals per the Federal Regulations.

In addition, CONTRACTORS, sub-CONTRACTORS and material suppliers shall provide training to their employees on the MSDS pursuant to the Federal Regulations.

SPECIAL REQUIREMENTS

7. Excavation Safety Requirements

It shall be the duty and responsibility of the CONTRACTOR and all of its SUBCONTRACTORS to be familiar and comply with all requirements of Public Law 91-596 29 U.S.C., Sections 651 et. seq., the Occupational Safety and Health Act of 1970 (OSHA) and all amendments thereto and to enforce and comply with all of the provisions of the Act. In addition and as required by Indiana State Law, BB 207 1, Section 14. of IC 4-13.6-5-12, the CONTRACTOR and all of its SUBCONTRACTORS shall comply with Subpart P of 29 CFR 1926 dated October 31, 1989 as may be amended.

Costs of all Excavation Protection shall be paid for as a separate pay item or be included in the pay item of the principal work with which the safety systems are associated as required by the Bid Proposal Documents.

8. Confined Space Access

For projects which include construction activities within "confined spaces" as defined in Title 29 CFR Part 1910.146, the CONTRACTOR is hereby advised that he must fully comply with all pertinent requirements as delineated in this regulation and as interpreted by OSHA. The CONTRACTOR shall have and maintain all necessary safety and testing equipment at all times during the course of the construction activity. In addition it shall be the CONTRACTOR'S responsibility to make this equipment available for use by the OWNER or the OWNER'S Representative on the project site. If the OWNER or the OWNER's Representative requires the use of this equipment during the course of observing or verifying the construction, it shall be made available in a timely fashion. If the OWNER or the OWNER's Representative is unable to observe or verify a portion of the construction due to a lack of the necessary safety or testing equipment, any resulting delays and/or expenses shall be the responsibility of the CONTRACTOR.

This equipment shall include a gas monitor capable of detecting oxygen, combustibles, and toxics including carbon monoxide and hydrogen sulfide. A metal oxide (broad based) sensor may be used in lieu of the individual carbon monoxide and hydrogen sulfide sensors. CONTRACTOR shall provide gas monitor calibration certifications to ENGINEER to verify proper maintenance.

9. Use Of Crawler Equipment On Roads

The CONTRACTOR shall not use or operate tractors, bulldozers, or other power operated equipment the treads or wheels of which are so shaped as to cut or otherwise injure such surfaces, on paved surfaces unless pavement is sufficiently protected in a manner satisfactory to the ENGINEER. All surfaces which have been injured by the CONTRACTOR's operations shall be restored to a condition at least equal to that in which they were found immediately before work was begun. Suitable materials and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period.

SPECIAL REQUIREMENTS

10. Dust, Noise And Working Hours

Dust shall be minimized by use of water and deliquescent salts. Noise shall be minimized by use of properly constructed and maintained equipment provided with suitable mufflers, snubbers, and other sound attenuating devices and supports. Hydraulic dredging shall occur 24 hours per day, 7 days per week.

11. Project Site Erosion Control

The CONTRACTOR shall be responsible to comply with all aspects of 327 IAC 15-5, Rule 5, "Storm Water Run-Off Associated with Construction Activity". The CONTRACTOR shall be responsible for compliance with this Law throughout the construction period and shall pay any and all fines resulting from any violation, suit or penalty for noncompliance. See DIVISION 2 SITEWORK, Section 02270 - Erosion Control.

12. Permits

The following list of Permits have been included with these Special Provisions to insure that all requirements of the Permits are known by the CONTRACTOR prior to bidding. Any provision of these Permits which conflicts with the Plans and Specifications must be adhered to.

- A. Indiana Department of Natural Resources - Public Freshwater Lake Approval
- B. Corps of Engineers - Section 404 Individual Permit
- C. Rule 5 Permit - Erosion and Sediment Control Approval
- D. Indiana Department of Environmental Management - Section 401 Water Quality Certification

The CONTRACTOR shall comply with all provisions of these permits. The CONTRACTOR shall obtain and pay for all other permits, licenses and other authorizations required for the prosecution of the work, including the cost of all work performed in compliance with the terms and conditions of such permits, licenses and authorizations, whether by himself or others.

13. Wage Scale

The Wage Scale for this Project shall be set by the proper Local Authorities and shall be local prevailing wage rates.

14. Other

- A. Progress meetings will not be periodic but will only be requested by the OWNER if the OWNER believes the CONTRACTOR is not meeting his schedule or believes specific issues regarding the project need to be discussed between the CONTRACTOR, ENGINEER and OWNER.

SPECIAL REQUIREMENTS

- B. Progress schedules will only need to be updated and submitted if either the CONTRACTOR or OWNER believe that delays or specific events have substantially impacted the project schedule.
- C. Video taping is not required, but is recommended to protect the CONTRACTOR from potential claims by landowners. The OWNER and ENGINEER shall be held harmless from such claims by landowners resulting from the CONTRACTOR's operations in completing the Work. ←



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

February 23, 1998

John M. Hamilton
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

VIA CERTIFIED MAIL P 126 007 929

Mr. Thomas E. Allenson
Permit Evaluation Section A, Regulatory Branch
Construction-Operations Division, Detroit District Corps of Engineers
Box 1027
Detroit, Michigan 48231

Dear Mr. Allenson:

Re: Section 401 Water Quality Certification
Project: Shipshewana Lake and
Wetland Enhancement
IDEM ID Number: 97-44-BAC-00095-A
COE ID Number: 97-144-034-OA
County: Lagrange

Office of Water Management staff have reviewed the project described in the Public Notice for file number 97-144-034-OA dated December 17, 1998, for Section 401 Water Quality Certification. The applicant proposes to discharge fill associated with hydraulic dredging 350,000 cubic yards of sediment from 200 acres of Shipshewana Lake with contained disposal on adjacent upland farm fields; settled water from the disposal area would be returned through an existing culvert to Shipshewana Lake; excavation and redistribution of 1,440 cubic yards of material associated with the enhancement of 1.2 acres of existing wetland and adjoining upland for its enlargement to 2.0 acres; excavation and redistribution of 6,664 cut and 339 fill cubic yards of material from 0.10 acres of Sara Davis Ditch and adjoining upland to create 1.7 acres of wetland and pond area. The purpose of the work is to improve water quality and the recreational value of Shipshewana Lake and to create wildlife habitat and new environmental education opportunities.

Based on the site investigation conducted on January 29, 1998, and available information, it is the judgment of this office that the proposed project will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if the applicant complies with the conditions set forth below. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification for the project described in the Public Notice for File Number 97-144-034-OA dated December 17, 1998. Any changes in project design or scope not detailed in the application described above are not authorized by this certification.

General Conditions:

1. Physical disturbance of banks, soils, and vegetation shall be limited to that which is absolutely necessary to achieve the project purpose.
2. The contractor performing the actual operations must comply with Section 311 of the Federal Clean Water Act and with 327 IAC 2-6 (formerly Indiana Stream Pollution Control Board Regulation 330 IAC 1-6-1) concerning spills of oil and hazardous materials.
3. Deposition of dredged or excavated materials shall be carried out in such a manner that sediment run off to any water body is controlled. Areas used for deposition of dredged materials shall be diked or bermed. The dredged or excavated material shall be stabilized with seed and straw mulch upon completion of construction activities.
4. Appropriate erosion control methods shall be installed prior to any soil disturbance to prevent soil from leaving the construction site. Appropriate erosion control methods include, but are not limited to, straw bale barriers, silt fencing, erosion control blankets, phased construction sequencing, and earthen berms. Information and assistance regarding control of construction-related soil erosion are available from the Soil and Water Conservation District offices, collocated with the local field office of the USDA Natural Resources Conservation Service in each county, and the regional field offices of the Indiana Department of Natural Resources' Division of Soil Conservation, whose administrative office is at 402 W. Washington Street, Room W264, Indianapolis, IN 46204.

Project-Specific Conditions:

1. The project engineer at the construction site will ensure that construction limits shown in the plans attached to the correspondence of will be clearly marked at all times during construction.
2. The project engineer at the construction site will ensure that all erosion control structures and devices will be regularly monitored and maintained, especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.
3. Physical disturbance of banks, submerged vegetation and riparian vegetation, especially large trees which provide shade to Shipshewana Lake, the Sara Davis Ditch, and wetlands associated with the project, should be limited to that which is absolutely necessary to the conduct of the project.
4. All attempts should be made to avoid and minimize impacts to wetlands.

Dredging should not impact the wetlands in and adjacent to Shipshewana Lake. Dredged material should be deposited on upland.

5. The wetland planting plan and success criteria shall be consistent with the plan submitted to this office attached to the correspondence sent by Ms. Donna Hegge of F.X. Browne, Inc. dated February 2, 1998.

This certification is effective 18 days from the mailing of this notice unless a petition for review and a petition for stay of effectiveness are filed within this 18 day period. If a petition for review and a petition for stay of effectiveness are filed within this period, any part of the permit within the scope of the petition for stay is stayed for 15 days, unless or until an Environmental Law Judge further stays the permit in whole or in part.

This decision may be appealed in accordance with IC 4-21.5, the Administrative Orders and Procedures Act. The steps that must be followed to qualify for review are:

1. You must petition for review in a writing that states facts demonstrating that you are either the person to whom this decision is directed, a person who is aggrieved or adversely affected by the decision, or a person entitled to review under any law.
2. You must file the petition for review with the Office of Environmental Adjudication (OEA) at the following address:

Office of Environmental Adjudication
ISTA Building
150 West Market Street
Suite 618
Indianapolis, IN 46204

3. You must file the petition within eighteen (18) days of the mailing date of this decision. If the eighteenth day falls on a Saturday, Sunday, legal holiday, or other day that the OEA offices are closed during regular business hours, you may file the petition the next day that the OEA offices are open during regular business hours. The petition is deemed filed on the earliest of the following dates: the date it is personally delivered to OEA; the date that the envelope containing the petition is postmarked if it is mailed by United States mail; or, the date it is shown to have been deposited with a private carrier on the private carrier's receipt, if sent by private carrier.

Identifying the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, or date of this notice will expedite review of the petition.

Note that if a petition for review is granted pursuant to IC 4-21.5-3-7, the petitioner will, and any other person may, obtain notice of any prehearing conferences, preliminary hearings,

hearings, stays, and any orders disposing of the proceedings by requesting copies of such notices from OEA.

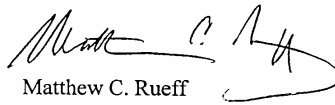
Granting of Section 401 Water Quality Certification does not relieve the applicant from the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person.

Failure to comply with the Section 401 Water Quality Certification may result in enforcement action against the applicant.

If you have any questions about this certification, please contact Mr. Brett A. Crump, Project Manager, of my staff at 317/233-2475, or you may contact OWM through the IDEM Environmental Helpline (1-800-451-6027).

If you have procedural questions regarding filing a petition for review you may contact OEA at 317-232-8591.

Sincerely,

A handwritten signature in black ink, appearing to read 'Matthew C. Rueff', with a stylized flourish at the end.

Matthew C. Rueff
Assistant Commissioner
Office of Water Management

cc: Mr. David Hudak, USFWS

Mr. Steve Jose, IDNR

Shipshewana Community Lake Improvement
3485 North 980 West
Shipshewana, IN

VIA CERTIFIED MAIL

F.X. Browne, Inc.
Attn: Ms. Donna L. Hegge
P.O. Box 401
Lansdale, PA 19446

Mr. & Mrs. Bob & Carolyn Butler
R#3, 114 Willow Run Drive
Monroeville, IN 46773

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

MAILED

NOV 17 1997

CERTIFICATE OF APPROVAL
PUBLIC FRESHWATER LAKE

APPLICATION #: PL-17,453

LAKE : Shipshewana Lake

APPLICANT : Shipshewana Community Lake
Improvement Association
Michael Martin, President
3485 North 980 West
Shipshewana IN 46565

AGENT : F.X. Browne, Inc.
Donna L. Hegge
P.O. Box 401
Lansdale PA 19446

AUTHORITY : IC 14-26-2 with 310 IAC 6-2

DESCRIPTION : Shipshewana Lake will undergo maintenance dredging within the entire lake, except in areas supporting lilies and emergent vegetation as highlighted on the attached map marked with "X's". Additionally, the maximum depth of the dredging will be limited to 6 feet below the lake's legal level in areas highlighted on the attached map marked with "O's". In total, approximately 350,000 cubic yards of accumulated sediments, muck and debris will be removed from the lake bed by hydraulic dredging to a depth of 6' to 16' below the lake's legal level. The excavated material will be transported to an upland containment area for dewatering and disposal. Water from the containment area will be allowed to return to the lake via gravity flow through a pipeline. Details of the project are contained in plans and information received at the Division of Water on July 7, 1997, September 2, 1997, October 9, 1997 and November 4, 1997.

LOCATION : Near Shipshewana, Newbury Township, LaGrange County
Section 4, T 37N, R 8E, Shipshewana Quadrangle
UTM Coordinates: Downstream = 4617675 North, 615350 East, Upstream = 4615100 North, 616675 East

APPROVED BY : Lori F. Kaplan
Lori F. Kaplan
Deputy Director
Department of Natural Resources

APPROVED ON : November 14, 1997

Attachments: Notice Of Right To Administrative Review
General Conditions
Special Conditions
Service List

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

NOTICE OF RIGHT TO ADMINISTRATIVE REVIEW

APPLICATION #: PL-17,453

This signed document constitutes the issuance of a permit by the Natural Resources Commission, or its designee, subject to the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

The permit or any of the conditions or limitations which it contains may be appealed by applying for administrative review. Such review is governed by the Administrative Orders and Procedures Act, IC 4-21.5, and the Department's rules pertaining to adjudicative proceedings, 312 IAC 3-1.

In order to obtain a review, a written petition must be filed with the Division of Hearings within 18 days of the mailing date of this notice. The petition should be addressed to:

Mr. Stephen L. Lucas, Director
Division of Hearings
Room W272
402 West Washington Street
Indianapolis, Indiana 46204

The petition must contain specific reasons for the appeal and indicate the portion or portions of the permit to which the appeal pertains.

If an appeal is filed, the final agency determination will be made by the Natural Resources Commission following a legal proceeding conducted before an Administrative Law Judge. The Department of Natural Resources will be represented by legal counsel.

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

GENERAL CONDITIONS

APPLICATION #: PL-17,453

- (1) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology
Room W274
402 West Washington Street
Indianapolis, Indiana 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- (2) This permit must be posted and maintained at the project site until the project is completed.
- (3) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

<u>Agency</u>	<u>Telephone Number</u>
Detroit District, U.S. Army Corps of Engineers	(313) 226-2218
Indiana Department of Environmental Management	(317) 233-2471
Local city or county planning or zoning commission	Check local directory

- (4) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- (5) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- (6) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation, or applicable statute or rule.
- (7) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. John N. Simpson, PE, Director
Division of Water
Room W264
402 West Washington Street
Indianapolis, Indiana 46204

Telephone: (317) 232-4160, FAX: (317) 233-4579

- (8) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- (9) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
SPECIAL CONDITIONS

APPLICATION #: PL-17,453

PERMIT VALIDITY: This permit is valid for 24 months from the "Approved On" date shown on the first page. If work has not been completed by November 14, 1999 the permit will become void and a new permit will be required in order to continue work on the project.

CONFORMANCE : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: July 7, 1997, September 2, 1997, October 9, 1997 and November 4, 1997. Any deviation from the information must receive the prior written approval of the Department.

Number Special Condition

- (1) minimize the movement of resuspended bottom sediment from the immediate project area
- (2) if sediment is removed hydraulically and transported to an upland dewatering basin, adequate slurry detention time and sediment removal measures must be used to ensure that the water returned to the lake is not carrying excessive sediment back to the lake
- (3) revegetate all bare and disturbed areas landward of the shoreline with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion
- (4) all excavated material must be properly spread landward of the shoreline on the property described on page 1 under "DESCRIPTION" or completely removed from the project site such that erosion and off-site sedimentation of the material is prevented

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

SERVICE LIST

APPLICATION #: PL-17,453

Shipshewana Community Lake
Improvement Association
Michael Martin, President
3485 North 980 West
Shipshewana IN 46565

F.X. Browne, Inc.
Donna L. Hegge
P.O. Box 401
Lansdale PA 19446

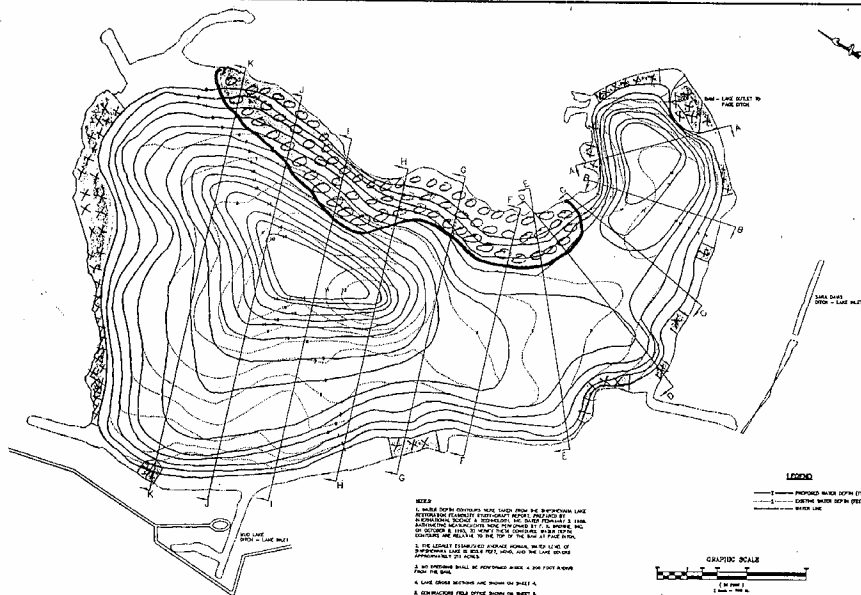
Regulatory Functions Branch
Detroit District, USACOE
c/o Mr. Gary Mannesto
P.O. Box 1027
Detroit MI 48231-1027

Division of Law Enforcement, IDNR
North Region Headquarters (Dist 2)
c/o Capt. Steven Seemeyer
RR 6, Box 344
Peru IN 46970

LaGrange County Plan Commission
100 North Detroit Street
Courthouse Annex
LaGrange IN 46761

Staff Assignment

Administrative: Markita L. Shepherdson
Technical : Chad A. Hoover
Environmental : Stephen H. Jose



NOTES

1. THESE TOPOGRAPHIC MAPS WERE MADE FROM THE SHESHWEAN LAKE RESTORATION PLANNING STUDY REPORT, PREPARED BY A. BROWNE, INC., 10000 N. 10TH AVENUE, SUITE 100, DENVER, COLORADO 80231, AND THE SHESHWEAN LAKE RESTORATION PLANNING STUDY REPORT, PREPARED BY A. BROWNE, INC., 10000 N. 10TH AVENUE, SUITE 100, DENVER, COLORADO 80231, AND THE SHESHWEAN LAKE RESTORATION PLANNING STUDY REPORT, PREPARED BY A. BROWNE, INC., 10000 N. 10TH AVENUE, SUITE 100, DENVER, COLORADO 80231.
2. THE EXISTING ELEVATIONS ARE BASED ON THE 1000 FT. OF SHESHWEAN LAKE IN 1970. THE LAKESIDE ROAD IS APPROXIMATELY 20 FEET ABOVE THE LAKE.
3. THE LAKESIDE ROAD IS APPROXIMATELY 20 FEET ABOVE THE LAKE.
4. THE LAKESIDE ROAD IS APPROXIMATELY 20 FEET ABOVE THE LAKE.
5. THE LAKESIDE ROAD IS APPROXIMATELY 20 FEET ABOVE THE LAKE.



F. X. BROWNE, INC.

ENGINEERS • PLANNERS • SCIENTISTS

LANSDALE, PA.

MARSHALLS CREEK, PA.

SARANAC LAKE, NY

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DESIGNED BY
D.L.H.
CHECKED BY
M.M.L.
DRAWN BY
K.M.L.
CHECKED BY
D.L.H.
DATE
8-18-87

F. X. BROWNE
PROFESSIONAL ENGINEER
INDIANA LICENSE NO. 0600130
DATE
8-18-87

SHESHWEAN COMMUNITY LAKE
IMPROVEMENT ASSOCIATION
MEMBERSHIP TO: SHESHWEAN LAKE RESTORATION PROJECT

SHESHWEAN LAKE RESTORATION PROJECT
HYDRAULIC DESIGNING
LAKE DRAINAGE PLAN

SCALE AS NOTED
PROJECT NO. P1137-02
DRAWING NO.
SHEET NO.
CASE NAME
LDSH

DNR NEWSFAX

Indiana Department of Natural Resources
402 W. Washington St. W255 B
Indianapolis, IN 46204-2748

For Immediate Release: September 3, 1997
For More Information: Michael Neyer, Division of Water, 317/232-4160

Applications for DNR water construction permits go on-line

Homeowners and businesses who need permits to construct along Indiana's waterways and lakes can now apply on-line through the Internet, Department of Natural Resources Director Larry Macklin announced today. The joint electronic project between the DNR and Access Indiana, state government's official website, also provides Internet users with instant access to a database of more than 13,000 permit applications filed with the DNR during the past 10 years.

"Applying on-line to construct in the floodway or on lakes is easy and it is fast. A computer program helps people file the application correctly the first time, enabling DNR staff to reduce the permit processing time by up to one month," Macklin said.

"We believe DNR is the first state government agency in the country to use the World Wide Web to process applications for permits. We anticipate that, within a year, a large number of water construction applications filed annually will be submitted through the Internet," Macklin said.

The application form is located on the DNR Division of Water's home page at www.ai.org/dnr/water. The application form prompts the applicant to complete all relevant sections before the application can be filed. Easy to understand directions are included on the application form, and a 150 page on-line manual provides the applicant with definitions and technical assistance.

A permit application database is updated at each phase of the application review process. Customers will be able to track the progress of their application by using their personal computer to tap into the database.

Indiana state laws require permits from the DNR for construction along waterways and lakes to make sure the building projects do not increase flooding; harm fish, wildlife and botanical resources; harm the natural resources and scenic beauty of lakes; or threaten the safety of life and property.

Following submission to the DNR, all applications are open to public review and comment. Landowners adjacent to the proposed site are notified of the application and interested parties may petition for a public hearing. Applications are reviewed by DNR technical and environmental staff before a permit is issued or denied.

"The on-line permit project helps make government services more accessible to the public. Initially, most applications will be filed by engineering firms working for a variety of customers. As more homeowners join the computer age, the percent of applications filed through the Internet will increase," Macklin said.

Applicant Survey

In an effort to better service our applicants, we are asking that you take a few minutes to rate the Department's performance in the processing of your permit application. When finished with this survey, please fold the survey; tape the open end and drop it in the nearest mail box.

Thank you for taking the time to complete this survey. Your opinion is very valuable to us and what you say will help us focus our efforts to continue to meet your needs and improve our level of performance.

Application Type:

- ☐ Floodway
☐ Public freshwater lake
☐ Other

Application #: _____ (optional)



INDIANA DEPARTMENT OF
NATURAL RESOURCES

Please answer each question by filling in the blank with the number representing your opinion of the Department's performance: 4=Excellent, 3=Good, 2=Fair, 1=Poor, 0=Unacceptable

Application Process:

Communication _____
 Efficiency _____
 Problem Resolution _____
 Timeliness _____

Staff:

Friendliness/Courtesy _____
 Willingness to listen _____
 Technical expertise _____
 Environmental expertise _____

Overall: (please circle)

Were you satisfied with the overall application process? Yes No

Did you receive good attention from the staff? Yes No

We would appreciate your comments on how our office can increase your overall satisfaction with the service we provide. If you have any suggestions, please state them below.

Would you like to discuss your comments with the Regulations Branch Director? If yes, please complete the following:

Name: _____

Telephone Number: () _____ and time _____ when you can be reached on Monday through Friday between 8 a.m. and 4 p.m.

If you prefer, you may return this survey by FAX to (317) 233-4579.

Indiana Department of Natural Resources
Division of Water
402 W. Washington St. Rm. W264
Indianapolis, IN 46204

Indiana Department of Natural Resources
Division of Water
Mr. Michael Neyer, P.E.
402 W. Washington St. Rm. W264
Indianapolis, IN 46204

Applicant Survey

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____ Dollars, \$(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____ 19 _____, a copy of which is hereto attached and made a part hereof for the construction of:

Shipshewana Lake Restoration Project: Hydraulic Dredging

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each
(number)
one of which shall be deemed an original, this the _____ day of _____ 19_____.

ATTEST:

(Principal) Secretary

By _____
Principal (s)

(SEAL)

(Witness as to Principal)

(ADDRESS)

(Address)

(Surety)

ATTEST:

(Surety) Secretary

(SEAL)

By _____
ATTORNEY-in-Fact

(Witness as to Surety)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____ hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars, \$(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____ 19____, a copy of which is hereto attached and made a part hereof for the construction of:

Shipshewana Lake Restoration Project: Hydraulic Dredging

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each
(Number)
one of which shall be deemed an original, this the _____ day of _____, 19____.

ATTEST:

(Principal) Secretary

Principal
By _____(s)

(SEAL)

(Witness as to Principal)

(ADDRESS)

(Address)

(Surety)

ATTEST:

(Surety) Secretary

(SEAL)

(Witness as to Surety)

By _____
ATTORNEY-in-Fact

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

NOTICE OF AWARD

Date: _____, 19__

To Contractor:

PROJECT: HYDRAULIC DREDGING OF SHIPSEWANA LAKE

You are hereby notified that your Bid dated _____, 19__ has been evaluated and you are the apparent successful bidder. You have been awarded a contract for the Hydraulic Dredging of Shipshewana Lake _____

The Contract Price of your contract is \$ _____.

Three copies of the proposed Agreement accompany this Notice of Award, that is by _____, 19__.

1. You must deliver to the OWNER three (3) fully executed counterparts of the Agreement. Each of the Agreements must bear your signature.
2. You must deliver the Contract Securities (Performance and Payment Bonds) as specified in the Instruction to Bidders, General Conditions and Supplementary Conditions, and Special Requirements.
3. You must deliver the Certificates of Insurance as specified in the General Conditions.

Failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned, and annul this Notice of Award and to declare your Bid Security forfeited.

Within ten (10) days after you comply with these conditions, OWNER will return to you one fully signed counterpart of the Agreement for your records.

Shipshewana Lake Community Improvements Association

By: _____

Title: _____

NOTICE TO PROCEED

To: _____ Date: _____

Project: Shipshewana Lake Restoration Project:

Hydraulic Dredging

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 19____, on or before _____, 19____, and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 19____.

Shipshewana Community Lake Improvement Association
(owner)

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

by _____,

this the _____ day of _____, 19____

By _____

Title _____

CHANGE ORDER

Order No. _____

Date: _____

Agreement Date: _____

NAME OF PROJECT: _____

OWNER: _____

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE:

Original CONTRACT PRICE \$ _____

Current CONTRACT PRICE adjusted by previous CHANGE ORDER \$ _____

The CONTRACT PRICE due to this CHANGE ORDER will be (increased) (decreased)

by: \$ _____

The new CONTRACT PRICE including this CHANGE ORDER will be \$ _____

Change to CONTRACT TIME:

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____ (Date).

Approvals Required:

To be effective this Order must be approved by the Federal agency if it changes the scope or objective of the PROJECT, or as may otherwise be required by the SUPPLEMENTAL GENERAL CONDITIONS.

Requested by: _____

Recommended by: _____

Ordered by: _____

Accepted by: _____

Federal Agency Approval (where applicable) _____

DIVISION ONE

GENERAL REQUIREMENTS

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SCOPE

- A. The intent and meaning of the Contract Documents require that the Contractor, under the terms of the Contract, shall take such action as necessary and/or required to provide labor and materials required for the Hydraulic Dredging of Shipshewana Lake. The lake will be hydraulically dredged, and the dredge slurry will be discharged to sediment dewatering equipment.
- B. The Work shall be constructed as described under subsection 1.2 DESCRIPTION OF THE WORK. Any modifications the Contractor chooses to make to the design represented in the technical specifications and the Contract Drawings shall require approval from the Engineer prior to the start of work.

1.2 DESCRIPTION OF THE WORK

A. Hydraulic Dredging

The work consists of mobilizing or constructing a hydraulic dredge including cutterhead, floating vessel and buoyant pipeline; booster pump (if necessary); dredge discharge pipeline; and any other equipment necessary to remove 250,000 cubic yards of unconsolidated sediments from Shipshewana Lake, and transporting the sediments through pipelines by pumping to sediment dewatering equipment located on an adjacent farm field.

The various items of work include but are not limited to:

- 1. Construction layout and pre-dredging bathymetric survey
- 2. Construction drawings and product data submittals
- 3. Providing any testing laboratory services as required by the specification sections
- 4. Site clearing of the dredge access area (if necessary)
- 5. Assembling and operating the hydraulic dredge
- 6. Providing various mechanical and other equipment, as required
- 7. Assembling the dredge discharge pipelines and fittings
- 8. Testing of all dredge discharge pipelines within the limits of the contract for leaks
- 9. Installation, maintenance and removal of a floating turbidity barrier upstream from the dam
- 10. Installation, maintenance and removal of soil erosion and sediment control measures for dredge access area and return water pipeline area
- 11. Transporting the dredged sediment to the sediment dewatering equipment
- 12. Providing monthly dredged sediment volume estimates
- 13. Temporary soil erosion and sediment control measures for the dredge access area (if necessary)
- 14. Clean up and site restoration of the dredge access area and the dredge discharge pipelines
- 15. Performing a post-dredging bathymetric survey
- 16. Installation, maintenance and removal of a return water pipeline including a riprap outlet apron

SECTION 01010

SUMMARY OF WORK

B. Disposal of Dredged Sediment

The Contractor is to implement soil erosion and sediment control measures around the sediment disposal area, mobilize sediment dewatering equipment, connect the return water pipeline to the sediment dewatering system, install safety fencing around the sediment disposal area, operate the sediment dewatering system, and regrade the sediment disposal area. The various items of work include but are not limited to:

1. Site preparation
2. Installation, maintenance and removal of soil erosion and sediment control measures in the sediment disposal area
3. Improvement of a construction access route, if necessary
4. Installation, maintenance and removal of safety fencing around the sediment disposal area
5. Mobilization, operation, maintenance and removal of a sediment dewatering system
6. Sampling of the return water
7. Regrading and restoration of the sediment disposal area
8. Stockpiling of excess dewatered sediment in stockpile area for removal by the Owner
8. Site restoration within the limit of the contract

1.3 PLANS

- A. The plans for this project were prepared for the Shipshewana Lake Community Improvement Association by F. X. Browne, Inc. and are entitled "Shipshewana Lake Restoration Project - Hydraulic Dredging Plans", F. X. Browne, Inc. Project No. IN1337-02.

1.4 CONTRACTS

- A. The hydraulic dredging and mechanical dewatering project will be completed under one (1) contract.
- B. This Summary of Work lists the general items of work for this project and should not be construed as being all-inclusive.

1.5 WORK SEQUENCE

The Contractor shall adhere to the following Construction Schedule:

- A. All site preparation, dredging operations, sediment dewatering operations, sediment regrading and site restoration shall be completed prior to December 31, 1998.

SECTION 01010

SUMMARY OF WORK

1.6 PERMITS

- A. The following permits and/or approvals have been or are currently being obtained for this project by the Owner:

1. Indiana Department of Natural Resources - Public Freshwater Lake Approval
2. Corps of Engineers - Section 404 Individual Permit
3. Rule 5 Permit - Erosion and Sediment Control Approval
4. Indiana Department of Environmental Management - Section 401 Water Quality Certification

Copies of permits/approvals that have been received to date are included in the Special Condition section of the contract documents.

- B. The Contractor shall become familiar with and perform all work in accordance with all requirements and conditions of all permits and/or approvals. If additional permits and/or approvals become necessary to do the work, the Contractor shall be responsible for obtaining all such permits and/or approvals.

1.7 SURVEYS

- A. The plans were developed based on bathymetric data developed by International Science and Technology, Inc. in 1989 and verified by F. X. Browne, Inc. in October, 1995. The results of this survey are shown on the Contract Drawings. The Contractor shall conduct bathymetric measurements periodically to estimate the volume of sediment dredged. These volume estimates shall be used as measurement for monthly progress payments after they are approved by the Engineer. The Contractor shall conduct a pre-dredging and post-dredging bathymetric survey. Both surveys shall be conducted by a licensed surveyor and shall be approved by the Engineer. The pre-dredging, periodic, and post-dredging bathymetric measurements shall be conducted as specified in Section 02482.

1.8 HOURS OF CONSTRUCTION

- A. The hours of construction for all work will be 24 hours per day, 7 days per week.

1.9 PROJECT PROGRESS MEETINGS

- A. If necessary, the Contractor shall attend monthly on-site project progress meetings with representatives from the Shipshewana Lake Community Improvement Association and/or the Engineer. These meetings will be organized by the Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 BASIS FOR MEASUREMENT AND PAYMENT

- A. All measurements for payment will be for completed work performed in strict accordance with Drawings, Specifications, and Construction details and with the Contract bidding and payment item schedules. All work completed under the Contract shall be measured by the Engineer according to the methods outlined below. Each pay item describes the necessary and relating work that shall be done under the corresponding bid item. If any work and/or material is paid under one item, that same work and/or material will not be paid for under any other item, even though that work and/or material may enter into another item.
- B. Requirements for progress payments of the Work completed to date are stated in Section 29 - PAYMENT of the General Specifications.
- C. The payment for any item will constitute full compensation for furnishing all labor, materials, and equipment required to acceptably complete the item of work.
- D. For items where payment limits are shown and/or described, the quantity of material and/or work will be estimated on the basis of length, width, and depth as shown or described. In the event that the Contractor feels these fixed limits are not sufficient to fully cover the costs for completing the item, the Contractor shall include the extra cost in the bid unit price for the appropriate item. Also, if actual work done and/or material installed is less than the payment limits, then the Contractor shall be paid for actual work and/or material only.

PART 2 - BID ITEMS

2.1 MOBILIZATION AND CONTRACT CLOSEOUT (BID ITEMS A)

- A. Measurement for this lump sum item will include all items described under this bid item and no separate quantity measurement shall be made.
- B. Payment for mobilization and contract closeout will be made at the lump sum contract price for Bid Item A, for which price and payment shall be full compensation for project mobilization and contract closeout, as specified in Section 01700. The lump sum contract price for Bid Item A shall not exceed the limits set forth in Section 01700.

2.2 SITE PREPARATION (BID ITEMS B)

- A. Measurement for this lump sum item will include all items described under this bid item and no separate quantity measurement shall be made.
- B. Payment for site preparation will be made at the lump sum contract price for Bid Items B for which price and payment shall be full compensation for all site preparation necessary as shown on the Contract Drawings and as specified in Section 02100.

SECTION 01025

MEASUREMENT AND PAYMENT

2.3 HYDRAULIC DREDGING (BID ITEM C)

- A. Measurement for this unit cost will be by cubic yard of unconsolidated sediment dredged, measured through a pre- and post-dredging bathymetric survey as specified in Section 02482. The Contractor shall make monthly estimates of cubic yards of sediment dredged by conducting bathymetric measurements as specified in Section 02482.
- B. Payment for hydraulic dredging shall include all materials, equipment, labor and services required to hydraulically dredge Shipshewana Lake to the depths required as shown on the Contract Drawings and as specified in Section 02482, to install approximately 250 linear feet of floating turbidity barrier upstream of the Shipshewana Lake dam, to transport the dredged sediment slurry via pipelines to the sediment dewatering equipment, and all other work for which payment is not otherwise provided for in the proposal. Monthly payments will be made at the contract unit price for Bid Item C for quantities up to and including 250,000 cubic yards of unconsolidated sediment, based on the Contractor's monthly estimate of the volume of sediment dredged. These volume estimates will be approved by the Engineer prior to submission for payment. Final payment for hydraulic dredging shall be made at the contract unit price for Bid Item C for the actual quantity of sediment dredged as measured through the post-bathymetric survey. Payment for hydraulic dredging of unconsolidated sediment in excess of 250,000 cubic yards will be made based on the contract unit price for Bid Item C and will be made only after approval from the Engineer and the Owner. If less than 250,000 cubic yards are dredged, payment will also be made based on the unit price for Bid Item C.

2.4 RETURN WATER PIPELINES (BID ITEM D)

- A. Measurement for this unit cost will be by linear foot of basin discharge pipeline installed completely in accordance with the Contract Drawings and Section 02700.
- B. Payment for the basin discharge pipelines will be made at the contract unit price for Bid Item D for quantities up to and including 700 linear feet, and shall include all materials, equipment, labor and services required to furnish, install, maintain and remove one (1) 10" min. diameter steel or approved alternative return water pipeline in accordance with the Contract Drawings and Section 02700. Payment for return water pipeline in excess of 700 linear feet shall be based on the contract unit price for Bid Item D and shall be made only after approval from the Engineer and the Owner.

2.5 SEDIMENT DEWATERING OPERATIONS (BID ITEM E)

- A. Measurement for this unit cost will be by cubic yard of dredged sediment dewatered, measured through a pre- and post-dredging bathymetric survey as specified in Section 02482. The Contractor shall make monthly estimates of cubic yards of sediment dewatered by conducting bathymetric measurements as specified in Section 02482.
- B. Payment for sediment dewatering shall include all materials, equipment, labor and services required to dewater the sediment dredged from Shipshewana Lake as specified in Section 02140. Monthly payments for sediment dewatering operations shall be made at the contract price for Bid Item E for quantities up to and including 250,000 cubic yards of dredged sediment dewatered. Monthly payments shall be made based on the Contractor's monthly estimate of the volume of sediment dredged. These volume

SECTION 01025

MEASUREMENT AND PAYMENT

estimates shall be approved by the Engineer prior to submission for payment. Final payment for sediment dewatering shall be made at the contract price for Bid Item 4 for the actual quantity of sediment dredged as measured through the post-bathymetric survey. Payment for sediment dewatering in excess of 250,000 cubic yards shall be made based on the contract unit price for Bid Item E and will be made only after approval from the Engineer and the Owner. If less than 250,000 cubic yards are dewatered, payment will also be made based on the unit price for Bid Item C.

2.6 EARTHWORK (BID ITEM F)

- A. Measurement for this lump sum item will include all items described under this bid item and no separate quantity measurement shall be made.
- B. Payment for earthwork will be made at the lump sum contract price for Bid Item F, for which price and payment shall be full compensation for all earthwork for the sediment disposal area, pipelines and elsewhere as shown on the Contract Drawings and as specified in Section 02200.

2.7 SOIL EROSION AND SEDIMENT CONTROL (BID ITEM G)

- A. Measurement for this lump sum item will include all items described under this bid item and no separate quantity measurement shall be made.
- B. Payment for the soil erosion and sediment control measures installed at the site will be made at the lump sum contract price for Bid Items G, for which price and payment shall be full compensation for the implementation of the approved Soil Erosion and Sedimentation Control Plan. by furnishing and installing measures that are required to conform to the requirements, including maintenance during site operations and the removal and disposal at the completion of work. Additional Soil Erosion and Sediment Control information is contained in Section 02270.

2.8 CONSTRUCTION ACCESS ROUTE (BID ITEM H)

- A. Measurement for this unit cost will be by linear foot of construction access route improved in accordance with Section 01550.
- B. Payment for construction access route improvement will be made at the contract unit price for Bid Item H for quantities up to and including 1,100 linear feet, and shall include all materials, equipment, labor and services required to provide a stable route for the construction equipment as specified in Section 01550. Payment for lengths of construction access route improvement in excess of 1,100 linear feet will be made based on the contract unit price for Bid Item G and will be made only after approval from the Engineer and the Owner.

PART 3 - NOT USED

++ END OF SECTION ++

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL

1.1 SCOPE

- A. Description of Work
 - 1. The Contractor, prior to performing excavation or demolition work on the job site, shall obtain all recorded locations of existing lines as outlined herein. Field engineering shall be incidental to earthwork.
 - 2. Attention is directed to the fact that there may be other lines in certain locations in addition to the recorded locations.
- B. Related Work Specified Elsewhere
 - 1. Earthwork is included in Section 02200.

1.2 SUBMITTALS

- A. The Contractor shall furnish to the Engineer a certification listing the names of the users whom he has contacted during the course of construction.

PART 2 - MATERIALS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

- A. It shall be the duty of each Contractor who intends to perform excavation or demolition work at the project site to ascertain the exact location and type of users' lines which are located within the limits of work of this contract.

3.2 OBTAINING LOCATION OF EXISTING USERS' LINES

- A. The Contractor shall obtain the list of users from any or all of the following sources:
 - 1. By inspection of the Contract Plans which show the approximate location of the user's facilities. Use of this information **does not** release the Contractor of the responsibility of obtaining a "current" listing if a reasonable amount of time has elapsed from award of the Contract to the actual time of excavation.
 - 2. By requesting a list of users from the Recorder of Deeds of the county in which the work is being performed.
 - 3. By contacting the Underground Location Service 1-800-272-1000.

SECTION 01050

FIELD ENGINEERING

- B. Not less than seven (7) working days prior to the day of the excavation or demolition work shall begin, the Contractor shall request that each of the users with facilities within the limits of the work of this Contract locate these facilities in the field. Generally, this will include determining and locating the number, size, depth and horizontal position of all lines. (Also see Paragraph 3.3 of this Section, "Locating Lines".)
- C. The following are cooperative steps which the Contractor shall take, either at or off of the excavation or demolition site:
 - 1. Before the Contractor starts any demolition work in the area of a particular user's line, the Contractor shall ascertain from the user if the user wants to have a representative present during the demolition within this area. Additionally, the Contractor will comply with all standard regulations and necessary precautions as may be required by the user.
 - 2. Inform each operator, employed by the Contractor at the site of such work, of the information obtained by the Contractor as noted above.
 - 3. Report immediately to the user any break or leak on its lines, or dent, gouge, groove, or other damage to such lines or to their coating or cathodic protection, made or discovered in the course of the excavation or demolition work.
 - 4. Alert immediately the occupants of premises as to any emergency that the Contractor may create or discover at or near such premises.
 - 5. The requirements of paragraphs A, B, or C.2, above shall not apply to a user or Contractor performing excavation or demolition work in an emergency.

3.3 LOCATING LINES

- A. All recorded or unrecorded lines, shall be located on the ground with pipe locating equipment well ahead of the work at all times. All such locations shall be plainly marked by coded paint symbols on pavement or by marked stakes in the ground. Such locations shall be established at least fifty (50) feet in advance of all trench excavation. All such location work shall be provided by the Contractor to the satisfaction of the Engineer at no extra cost.

++END OF SECTION++

SECTION 01100
DRAWING SCHEDULE

Contract No. 1 for the Hydraulic Dredging of Shipshewana Lake with an optional bid for sediment dewatering shall conform to details of these specifications and the Contract Drawings prepared by F. X. Browne, Inc. and entitled:

Shipshewana Lake Restoration Project
Hydraulic Dredging Plans

with sheets numbered and titled as follows:

<u>Sheet No.</u>	<u>Drawing No.</u>	<u>Drawing Title</u>
1	--	Title Sheet
2	1	Lake and Channel Sediment Thickness Plan
3	2	Lake Dredging Plan
4	3	Lake Cross Sections
5	4	Sediment Dewatering Site Plan
6	5	Erosion and Sediment Control Plan
7	6	Erosion and Sediment Control Notes

++END OF SECTION ++

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 SCHEDULES

- A. The Contractor shall be responsible for preparing a Progress of Work Schedule for the entire project.

1.2 SHOP DRAWINGS, SAMPLES AND CERTIFICATIONS

- A. The Contractor shall submit the shop drawings, samples and certifications required by the Contract to the Engineer and shall be responsible for their timely submission in accordance with the Submittal Schedule, which the Contractor shall include in the Progress of Work Schedule as described in Part 2 of this Section.
- B. Any proposed deviations/substitutions from that specified shall be clearly noted on the cover letter transmitting the shop drawing, sample or certification. Failure to so note will be cause for rejection of equipment, materials, etc. after installation.
- C. Revised shop drawings, samples or certifications submitted for review shall be marked "RESUBMISSION".

1.3 CONSTRUCTION PHOTOGRAPHS

- A. The Contractor shall be responsible for all construction progress photographs for the work.

1.4 SUBMITTAL PROCEDURES

- A. All submittals shall be delivered to the Engineer.
- B. The Engineer will screen the submittals to insure that they have been properly certified and identified by each Contractor. If they are submitted properly, the items will be processed for review.
- C. The processed submittals will be returned to the respective Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PROGRESS OF WORK SCHEDULE

- A. Preparation
 - 1. The Contractor shall prepare a Progress of Work Schedule for the entire project, showing the order in which the Contractor proposes to carry on the work and salient features, including submissions of shop drawings, samples and

SECTION 01300

SUBMITTALS

certifications and procurement of materials, to meet the date of completion. All major subcontractors shall be consulted in the preparation of the Progress of Work Schedule and shall signify their approval of the finished schedule by signing it. Under no circumstances will the actual work begin on any contract until seven (7) calendar days after approval of the Progress of Work Schedule by the Engineer.

2. Each activity in the Progress of Work Schedule shall be identified and a time for the performance of such activity indicated. Each activity shall be preceded by all work that must be accomplished prior to that activity. The Progress of Work Schedule shall use the Critical Path Method. Bar chart format schedules shall be acceptable. All abbreviations, codes and/or symbols used shall be described on the Progress of Work Schedule.

B. Submission

1. Submit three (3) copies of the Progress of Work Schedule to the Engineer for review within seven (7) days after Award of Contract. Update and resubmit the Schedule weekly thereafter until completion of the work. Updated Schedules shall have completed activities removed or indicated as such. Whenever modifications are made to the Contract which add or delete activities and/or revise time of completion, the Schedule shall be revised and resubmitted to the Engineer within seven (7) days after such modification is authorized.
2. In the event that the work is behind schedule, the Progress of Work Schedule shall be revised, through the use of overtime work or by other means, to insure that the work is completed within the Contract time. Under these circumstances, overtime work shall be performed at no additional cost to the Owner.

3.2 SHOP DRAWINGS

A. General

1. Shop drawings are defined as drawings, diagrams, illustrations, schedules, performance charts, brochures and other data prepared by the Contractor which illustrate how specific portions of the work shall be performed, constructed and/or installed.
2. Shop drawings are not part of the Contract Documents, but are a supplementary means of communications to assist in the understanding of what the Contractor proposes to provide and to establish whether what he intends to install does or does not conform to the Contract Drawings and Specifications.
3. In the instance of a request for substituted items, the Contractor shall verify that they will conform to required standards and specifications of the Contract. Where modifications to the Contract Documents are proposed, the Contractor must clearly indicate such deviation in writing in a transmittal letter. If modifications and/or substitutions are agreed to by the Engineer, the Contract Documents will be appropriately modified. However, when additional work is required, the

SECTION 01300

SUBMITTALS

Contractor is advised that he must pay the Engineer for redesign to accommodate the revised substitution as well as pay other contractors for extra work required by them for the change. No increase in Owner's construction cost will be allowed.

4. Each Contractor will submit for review six (6) white prints of construction and working drawings of material fabricated especially for this Contract, and of equipment and materials for which such drawings are specifically requested.
5. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to be satisfied that the subject matter conforms to the Plans and Specifications in all respects. Drawings which are correct shall be marked with the date, checker's name and certification of the Contractor's approval, and then shall be submitted to the Engineer. Any shop drawings submitted without the Contractor's certification will be returned without review.
6. The Engineer will retain three (3) copies and return the remainder to the Contractor.
7. Shop drawings shall show the principal dimensions, weight, structural and operating features, performance characteristics and wiring diagrams, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When it is customary to do so, when the dimensions are of particular importance or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for this Contract.
8. When so specified, or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive matter, illustrations, etc., may be submitted for review in place of shop and working drawings. In such case the requirements shall be as specified for construction and working drawings, insofar as applicable.
9. The Contractor shall be responsible for the prompt submission of all shop and working drawings in accordance with the Construction Schedule so that there shall be no delay to the work due to the absence of such drawings.
10. No material shall be purchased or fabricated especially for this Contract until the required shop and working drawings have been submitted and reviewed as conforming to the Contract requirements. All materials and work involved in the construction shall then be as represented by said drawings.
11. Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to confirm that the subject matter thereof conforms to the Contract Drawings and Specifications in all respects. Drawings which are correct shall be marked with the date, checker's name and indication of the Contractor's approval,

SECTION 01300

SUBMITTALS

and then shall be submitted to the Engineer; other drawings shall be returned for correction.

12. The Engineer's review of shop and working drawings will follow a general check made to ascertain conformance with the design concept and functional result of the project and compliance with the information given in the Contract Documents. The Contractor is responsible for details and accuracy, for conforming and correlating all quantities and dimensions at the job site; for information that pertains solely to the fabrication process or to techniques of construction; and for coordination of the work of all trades.

B. Submittal Procedures

1. All shop drawings shall be delivered to the Engineer.
2. The Engineer will return the processed shop drawing submittals to the Contractor.

C. Catalog Sheets

1. For standard manufactured items considered by the Engineer as not requiring special shop drawings, the Contractor shall submit four (4) copies of manufacturer's catalog sheets showing illustrated cuts of the items to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, wiring and control diagrams and all other pertinent information.
2. The Engineer will retain three (3) copies and return the fourth copy to the Contractor submitting the catalog sheets.

D. Field Distribution

1. The Contractor shall be responsible for the required number of processed drawings or catalog cuts for field distribution to all necessary subcontractors.
2. The Contractor shall be responsible for the prompt distribution of processed shop drawings to all subcontractors whose work must be coordinated with the work progress.
3. The Contractor shall have the overall responsibility for coordinating the necessary information to properly coordinate the work in accordance with Section 01010.

3.3 SAMPLES

A. Submission of Samples

1. Unless otherwise specified, the Contractor shall provide samples in duplicate and identify each sample by an appropriate tag or label listing the names of the Project, the Owner, the Engineer and the Contractor and/or subcontractor as well as the exact identification of the samples. Tag or label shall be large enough to provide a blank space for review stamps.

SECTION 01300

SUBMITTALS

2. Samples of items submitted for destruction tests or for use in testing mixture with other materials will not be returned. Review of these items will be given by letter.
3. When reviewed, one sample of each item, not submitted for destruction, will be returned to the Contractor and shall be kept and maintained in good condition in the submitting Contractor's office at the project site for later use in comparison with material actually delivered for the work. When samples of large fabricated items or of costly items are required, reviewed samples may be installed in the work if the exact location of such samples is recorded on the Engineer's Record Drawings.

3.4 CERTIFICATIONS AND TESTS

A. General

1. Two (2) copies of certifications and reports of tests shall be submitted when required under the various sections of the Specifications.

3.5 CONSTRUCTION PHOTOGRAPHS AND SLIDES

A. General

1. The Contractor shall provide twelve clear, sharp, color photographs monthly, starting when the work begins and continuing as long as the work is in progress.
2. Views shall be provided of the general construction area prior to any activity, and subsequent views, indicating all areas of progress, including, but not limited to, dredge access area preparation, installation of pipelines, installation of soil erosion and sediment control measures, dredge operation, sediment dewatering system operation, return water discharge, and restoration work, shall be submitted to the Engineer each month in conjunction with the current Monthly Estimate. Photographs shall be 3 inches x 5 inches in size and shall be submitted in duplicate.

B. Final Views

1. After all work has been completed and the site has been graded and cleared of debris and equipment, the Contractor shall take twelve views in color of the project site. These will be the final photographs, and the photographer shall consult with the Engineer regarding choice of views to be photographed.

++END OF SECTION++

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. The Contractor and each interested Subcontractor and/or Vendor is referred to conditions and requirements given in various Divisions of the Specifications and to other Sections of this Division, General Requirements insofar as such documents affect the work of this Section.
2. Construction facilities and temporary controls shall be incidental to hydraulic dredging.

B. Related Work Specified Elsewhere

1. Locating existing utility lines is included in Section 01050.
2. Temporary utilities are included in Section 01510.
3. Temporary fencing and gates are included in Section 01530.
4. Construction access route is included in Section 01550.
5. Dredging access is included in Section 02482.

1.2 OCCUPYING PRIVATE LAND

- ###### **A.**
- Written consent from the proper parties shall be obtained by the Contractor prior to entering or occupying with workers, tools, materials or equipment any land other than the Contractor's property or that of the Owner for any purpose related to the Contractor's performance of the work on this Contract

1.3 PROTECTION OF EXISTING UTILITIES

- ###### **A.**
- The Contractor shall conduct operations and take all special precautions necessary to protect equipment, utility lines, roadways and subsurface, submerged and overhead facilities which are to remain in place and undisturbed by operations under this Contract. The offending Contractor shall immediately notify the Owner of the facilities or areas which are disturbed, damaged or injured as a result of the Contractor's operations and determine the proper method of replacing or repairing the affected facilities at least to the conditions which existed prior to the Contractor's operations. The offending Contractor shall, at the Contractor's expense, replace, repair or restore the affected facilities or areas to their original condition or shall reimburse the Owner of said facilities or areas for such expenses as the said Owner may accrue in performing the work. The Contractor shall not be entitled to receive additional compensation under this Contract for such work.

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.4 INTERFERENCE WITH AND PROTECTION OF STREETS

- A. No Contractor shall close or obstruct any portion of a street, road or private way without obtaining permits therefor from the proper authorities. If any street or private way shall be rendered unsafe by the Contractor's operations, the Contractor shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Engineer.
- B. The Contractor shall assume full responsibility for the maintenance and restoration of those roadways within the construction area and also those roadways on which equipment must operate to reach the construction area.
- C. Street, roads, private ways and walks not closed shall be maintained passable by the Contractor at the Contractor's expense, and the Contractor shall assume full responsibility for the adequacy and safety of provisions made.
- D. The Contractor shall, 48 hours in advance of closing any street, notify the police and fire departments in writing, with a copy to the Engineer. The Contractor shall cooperate with the police department in the establishment of alternate routes and, at the Contractor's expense, shall provide adequate, plainly marked detour signs. The signs shall be as required by the agency that has jurisdiction over the roadway.
- E. The Contractor shall develop a traffic control plan for the equipment mobilization route, including, but not limited to, appropriate warning signs and observance of roadway weight limits. The Contractor shall provide an adequate number of persons employed at the Contractor's expense to implement the traffic control plan.

1.5 SAFETY PRECAUTIONS

- A. Until final acceptance of the work under this Contract, the Contractor shall continuously maintain adequate protection of their work and work in progress from damage, and shall protect from loss or damage machinery, equipment, materials and supplies being handled, from loss or damage arising out of or in connection with the prosecution of his work. The Contractor shall make good any such loss or damage. The Contractor shall adequately protect adjacent private and public property as provided by law and the Contract Documents.
- B. No Contractor shall load or permit any part of any structure to be loaded with a weight that would endanger its safety. It shall be the Contractor's responsibility to verify the acceptable load carrying capacity of any structure the Contractor's equipment or work will effect, unless the load carrying capacity is so stated by the Engineer.
- C. The Contractor shall immediately report in writing, giving full details, to the Owner all accidents which arise out of or in connection with the performance of the work, whether on or adjacent to the site, which cause death, serious personal injury or substantial property damage. In addition, the accident shall be reported immediately by the telephone or messenger to the Engineer. If a claim is made or suit is filed by anyone against the Contractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer, with a copy to the Owner, giving full details of the claim.

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- D. The Contractor shall assume all risks of loss or damage of any kind to any vehicles, machinery, equipment, materials or supplies which the Contractor shall provide in doing the work.
- E. The Contractor shall conduct the work in such a manner as to adequately protect property owned by others on or about the Owner's premises from damage by the construction operations.
- F. The Contractor shall provide protection of their work from freezing and from other elements which would be harmful to it. The Contractor shall furnish heat or protective shelters or temporary buildings, as required, for the prosecution and protection of all the work.
- G. The Contractor shall take all necessary precautions for the safety of employees on the work. The Contractor shall comply with all applicable provisions of federal, state and local safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards and barricades for the protection of employees on the work and the safety of others employed near the work and public. The Contractor shall post danger signs and warning lights warning against the hazards created by such features of the construction as protruding nails, hoists, excavations, elevator hatchways, scaffolding, window openings, stairways and falling materials. The Contractor shall designate a responsible member of its organization on the work, whose duty shall be the prevention of accidents. The name and position of the person so designated shall be reported in writing to the Engineer with a copy to the Owner.

1.6 DUST CONTROL

- A. During the progress of the work, the Contractor shall conduct operations and maintain the area of activities so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish the material, load, deliver, and spread it as authorized.

1.7 SANITARY

- A. The Contractor shall provide, maintain and remove when no longer required, an adequate number of temporary, prefabricated, chemical-type toilets with proper enclosures for the use of workers of all trades during construction. The location of the toilets shall be approved by the Engineer.
- B. The Contractor shall keep toilets clean and supplied with toilet paper at all times. The Contractor shall comply with all local and state health requirements and sanitary regulations. The Contractor shall obtain all necessary permits from the Municipality's Zoning Officer for provisions of portable toilets.

1.8 WATER

- A. The Contractor shall make necessary arrangements and supply all water required during the entire construction period. The Contractor shall provide suitable drinking water for all workers on the Project.
- B. Temporary water service shall be removed when no longer required.

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.9 ELECTRICITY

- A. The Contractor shall make necessary arrangements and supply and pay for all temporary electric service and lighting required during the entire construction period. Temporary electric service shall be of sufficient capacity and characteristics to supply proper current for various types of construction tools, motors, lights, pumps and other items required.
- B. The Contractor shall make provision to meter electricity required for temporary office facilities and storage sheds.

1.10 FUEL, POWER, ETC., FOR TESTING

- A. Unless otherwise specified, the Contractor shall pay for all natural gas, potable water and electricity required for testing of installed work of this Contract. Labor and supervision required for making tests shall be provided by the Contractor.

1.11 SECURITY

- A. The Contractor shall provide and pay for an adequate level of security protection to protect the property and material of the Owner and all Subcontractors from pilferage, removal or damage at all times.

1.12 OFFICES AND STORAGE

- A. The Contractor shall, for his own use, provide and maintain a temporary office. The Contractor shall also provide and maintain such watertight storage sheds with floors as may be required for storage of materials which might be damaged by weather. The Contractor shall allocate suitable space for office and storage for the Subcontractors within the area indicated on the Plans subject to the acceptance of the Engineer. The temporary office shall contain a telephone, a telefax machine, and sufficient paper for the telefax machine. Temporary fencing shall be installed around the temporary office facility and the sheds in accordance with Section 01530.
- B. Materials stored in the open at the project site shall be stored on planks or other dunnage as necessary to keep materials from contact with the ground and shall be covered with tarpaulins for protection from weather.
- C. All temporary offices and storage facilities shall be removed when they are no longer required.

1.13 TELEPHONE

- A. The Contractor shall make necessary arrangements and supply and pay for all temporary telephone service required during the entire construction period. Temporary telephone service shall be of sufficient capacity and characteristics to supply proper connection for a telephone and a telefax machine in the Contractor temporary office.
- B. The Contractor shall make provision to meter telephone service required for temporary office facilities and storage sheds.

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

SECTION 01510
TEMPORARY UTILITIES

PART 1 - GENERAL

1.1 SCOPE

- A. Description of Work
 - 1. As presented below and for purposes of performing the work, utilities are defined as telephone, water supply, fuel required by the hydraulic dredge, the dewatering equipment, or related equipment, and electrical power services.
 - 2. The Contractor's bid will include all necessary costs to relocate all utilities within the limits of construction and to restore permanent utilities at the conclusion of the work. Temporary utilities are incidental to sediment dewatering.
- B. Related Work Specified Elsewhere
 - 1. Locating existing utilities is included in Section 01050.
 - 2. Construction facilities and temporary controls are included in Section 01500.
 - 3. Earthwork is included in Section 02200.
 - 4. Restoration of non-vegetated areas is included in Section 02520.
 - 5. Restoration of vegetated areas is included in the Soil Erosion and Sediment Control Plan.

1.2 REGULATORY REQUIREMENTS

- A. Obtain all necessary permits and approvals for the use of the provided utilities.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor will be responsible for providing all telephone, electrical, fuel, and water service to the site as is necessary to do the work.
- B. The Contractor will be responsible for the operation of all systems, including maintenance, to assure that necessary services are provided.
- C. The Contractor will be responsible for all telephone costs including installation, service charges and discontinuance.
- D. The Contractor will be responsible for all electrical charges. All electrical power will be purchased directly by the Contractor.

SECTION 01510

TEMPORARY UTILITIES

- E. Existing utility lines, electric, water, and sewer, will be available to the Contractor for use. Any extension, connection or alteration needed for temporary power will be performed by the Contractor at the Contractor's expense and coordinated with the appropriate local utility authorities. All modifications to existing utilities for temporary construction facilities will be removed by the Contractor at the completion of the project.

3.2 TELEPHONE SERVICE

- A. The Contractor will make the necessary arrangements with the local telephone company to install equipment and services to meet site requirements and will be responsible for all related installation, service and shutoff costs.

3.3 ELECTRICAL POWER

- A. The Contractor will be responsible for providing electrical service as necessary to conduct the work.
- B. The Contractor will provide adequate lighting at the site and will be responsible for the installation and maintenance of the same. The power service lines and the lighting poles and fixtures will be removed prior to project closeout.
- C. The Contractor will make the necessary arrangements with the appropriate power authority for service and will be responsible for installation, maintenance and shutoff costs for on-site power connections.

3.4 FUEL SOURCE

- A. The Contractor will make necessary arrangements to provide adequate fuel to operate the hydraulic dredging equipment and/or sediment dewatering equipment, and related equipment as required herein.

++END OF SECTION++

SECTION 01530

BARRIERS AND ENCLOSURES

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. The Contractor shall furnish, install, maintain and remove temporary chain-link fencing with gates and safety fencing as indicated on the Drawings and as specified herein.
2. The temporary chain-link fencing, gates and safety fencing shall be incidental to sediment dewatering.

B. Related Work Specified Elsewhere

1. Contractor's field office is included in Sections 01500 and 01700.

1.2 SUBMITTALS

- A.** Ten (10) days before installation, the Contractor shall submit shop drawings of the temporary chain-link fencing, gates and accessories, together with the erection drawings in accordance with Section 01300 to the Engineer for review and approval.

PART 2 - PRODUCTS

2.1 TEMPORARY CHAIN-LINK FENCING

- A.** Fence Fabric: Fabric shall be one continuous piece, 72 inches in height, and shall be woven in 2-3/8 inch (maximum) mesh from 11-1/2 gauge galvanized wire.
- B.** Posts: Posts shall be made of steel pipe of the sizes and weights given below or of other approved equivalent section.
1. Line posts shall have a 1-5/8 inch (minimum) outside diameter.
 2. Gate posts shall have a 2-1/2 inch (minimum) outside diameter.
- C.** Top Rail: The top rail shall be continuous for the full length of the fence. The fence fabric shall be attached to the top rails and the top rails shall attach to the gate posts.
- D.** Tension Wire: Tension wire shall be provided along the bottom of all fencing. The tension wire shall be fastened to the fence fabric and to the gate posts.
- E.** Fittings: Fittings shall be wrought iron, malleable iron, or pressed steel.
- F.** Gates: Gates shall be single or double-leaf, swing gates. They shall be of woven-wire fabric in suitable, amply braced frames. Hinges shall be of approved material and of ample strength. The gates shall be provided with suitable latches and provisions for locking.
- G.** Gate Locks: The Contractor shall supply commonly keyed locks for all gates with two keys for the Engineer and two keys for the Owner. The locks shall be case hardened 3/8" shank manufactured by U.S. Lock Company, or equivalent.

SECTION 01530
BARRIERS AND ENCLOSURES

2.2 SAFETY FENCING

- A. Fence Fabric: Safety fencing shall be constructed of synthetic mesh fabric, shall be at least two (2) feet in height, and shall be safety orange in color.
- B. Posts: Posts shall be made of wood and shall have the minimum dimensions of 2½ inches by 2½ inches by four feet.

PART 3 - EXECUTION

3.1 TEMPORARY CHAIN-LINK FENCING INSTALLATION

- A. The fencing and gates shall be erected by skilled mechanics in accordance with the recommendations of the manufacturer. Posts shall be driven 2 feet (minimum) into the ground and shall be spaced 12 feet (maximum) on centers.
- B. The fencing shall be installed around the perimeter of the Contractor's temporary office and elsewhere as shown on the Contract Drawings and shall follow the contours of the ground as nearly as is practical.
- C. The Contractor shall keep the gates locked at all times except during use.

3.2 SAFETY FENCING INSTALLATION

- A. The fencing shall be erected in accordance with the recommendations of the manufacturer. Posts shall be driven 2 feet (minimum) into the ground and shall be spaced eight (8) feet (maximum) on centers.
- B. The fencing shall be installed around the return water pipeline outlet riprap apron, the sediment disposal area and elsewhere as shown on the Contract Drawings.

3.3 REMOVAL

- A. The Contractor shall remove the temporary chain-link fencing from around the Contractor's temporary office and all other areas during project closeout.
- B. The Contractor shall remove the safety fencing from around the return water pipeline outlet riprap apron when the apron is removed, and from the sediment disposal area and all other areas during restoration activities.

++END OF SECTION++

SECTION 01550
CONSTRUCTION ACCESS ROUTE

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. The Contractor shall provide all labor, materials and equipment necessary for the improvement, signage, maintenance and restoration of the proposed construction access route shown on the Drawings. The construction route access road to the dewatering area is approximately 1100 linear feet and is currently a farm road which may require improvement with crushed stone. The dredge access area will be at the public access area near the northeastern portion of the lake. Contractors will be responsible for evaluating the public access area to determine what, if any improvements will be necessary for launching the dredge at the area.

B. Related Work Specified Elsewhere

1. Site Preparation is included in Section 02100.
2. Restoration of non-vegetated areas is included in Section 02520.
3. Soil erosion and sediment control is included in Section 02270 and the approved Soil Erosion and Sediment Control Plan

PART 2 - PRODUCTS

2.1 AGGREGATE

- A. The crushed aggregate shall be clean or bank run stone and quarry process stone.

PART 3 - EXECUTION

3.1 IMPROVEMENT

- A. The Contractor shall add clean or bank run stone and perform any other improvement necessary to provide a stable means of transporting construction equipment and material around the site. The Contractor shall install geotextile fabric under all areas of the construction access road.

3.2 SIGNAGE

- A. The Contractor shall place truck traffic signs along the construction access route to notify park users.

3.3 MAINTENANCE

- A. The Contractor shall maintain the construction access route for the entire contract time.

SECTION 01550

CONSTRUCTION ACCESS ROUTE

3.4 RESTORATION

- A. After dredging is complete, the final grading of the sediment disposal area, and the removal of the pipelines, the Contractor shall restore the construction access route to its original condition.

++ END OF SECTION ++

SECTION 01700
MOBILIZATION AND CONTRACT CLOSEOUT

PART 1 - MOBILIZATION

1.1 SCOPE

- A. Description of Work
 - 1. The Contractor shall provide all labor, materials and equipment to perform mobilization and contract closeout as specified herein.
- B. Related Work Specified Elsewhere
 - 1. Restoration of non-vegetated areas is included in Section 02520.
 - 2. Post-dredging bathymetric work is included in Section 02482.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials under this part of this Specification are limited to those required for mobilization for the Contractor but not intended for incorporation in the complete Contracts.

PART 3 - EXECUTION

3.1 MOBILIZATION

- A. Mobilization shall consist of initiating the Contract and may include such portions of the following as are required at the beginning of the project:
 - a. Setting up the Contractor's general plant, shops, storage areas and other facilities as may be required by the specifications, by Local, County, or State law, or by regulation; the locations of which shall be approved by the Engineer.
 - b. Obtaining all permits, approvals and licenses, and paying the fees for same, required in addition to those obtained by the Owner.
 - c. Protecting existing utilities.
 - d. Providing required insurance and bonds.
- B. All equipment required to diligently start the Contractor's construction work shall be on the site in satisfactory operating condition. The physical construction facilities including field office, personnel and equipment shall be set up and operating at the required efficiency to diligently pursue the work.

SECTION 01700

MOBILIZATION AND CONTRACT CLOSEOUT

3.2 CLEANING

- A. The Contractor shall perform final cleaning.
- B. Final cleaning shall be performed after the work is completed and before final inspection of the work by the Owner.
- C. The Contractor shall remove all field offices, storage facilities and any other materials or items that were used by the Contractor during the construction and not incorporated into the Project. Temporary service areas shall be left in a clean condition and any damaged areas shall be repaired or replaced before completion of the Project. The Contractor shall also seed and sod if required.

3.3 FINAL RESTORATION

- A. In addition to the requirements specified in the various Sections of these Specifications, the Contractor shall make final restoration of all areas disturbed by the temporary construction facilities such as, but not limited to, office and storage trailers.
- B. In general, the Contractor shall repair all walks, roadways and any other areas damaged during construction, inside or outside the Construction zone, to a condition at least equal to that in which they were found immediately prior to the beginning of operations.

3.4 RECORD DRAWINGS

- A. In addition to the prints furnished for construction and for public bodies, the Contractor will be furnished without charge, two sets of White Prints for the purpose of recording as-built conditions.
- B. These prints shall be marked as "Record Drawings" and maintained at the Project site. The Contractor shall record on the prints all deviations from the Contract Drawings, if any, at the time that such deviations are made.
 - 1. All changes made in arrangement or construction of the Project, as well as a complete record of the exact manner in which mechanical work was accomplished, shall be recorded on these prints. Dimensions shall be included where necessary to accurately locate piping and other items which will be concealed and which may later be necessary to locate for service.
 - 2. Record Drawings shall show all vertical and horizontal changes to the lake and the sediment disposal area as shown on the Drawings. Record Drawings shall indicate a profile showing the depths where rock, and any hard clay layers, were encountered which could not be removed, and all other changes made to the Contract Drawings.
 - 3. A complete file of accepted field sketches, diagrams, and other changes, as may become necessary during the progress of the work, shall also be maintained and attached to the set of marked-up prints.

SECTION 01700

MOBILIZATION AND CONTRACT CLOSEOUT

4. For each progress payment submission, the Contractor shall provide evidence to the satisfaction of the Engineer that all construction to date has been documented into the Contractor's "Record Drawings".
5. At completion of the work, the Contractor shall provide, for the information of the Engineer, one set of each sheet of marked up prints and all accepted field sketches and diagrams.
6. When this data has been checked and returned by the Engineer, the Contractor shall record all field changes and conditions on the "Record Drawings". Each sheet of these "Record Drawings" shall be signed by an Officer of the company certifying that each sheet reflects the dredged or disposal conditions.
7. Before final payment for this close-out item, the Contractor shall deliver "Record Drawings" in a clean and neat condition to the Engineer.

3.5 INITIAL PAYMENT

- A. Fifty percent (50%) of the price bid for Mobilization and Contract Closeout will be payable to the Contractor whenever five percent (5%) of the Contract has been completed. For the purposes of this item, five percent (5%) of the work shall be considered completed when the total of payments earned, exclusive of the amount bid for this item, exceeds five percent (5%) of the total price bid for the Contract.

3.6 FINAL PAYMENT

- A. The final fifty percent (50%) of the price bid for Mobilization and Contract Closeout will be payable to the Contractor when the Contractor has performed the following:
 1. Completed all of the Work including the post-dredging bathymetric survey.
 2. Cleaned up and made final restoration.
 3. Delivered all required documents enumerated in the Specifications including, but not limited to, the following:
 - a. Required warranties and guarantees
 - b. Special bonds
 - c. Certificates from manufacturers
 - d. Certificates from regulating agencies and/or authorities
 - e. Record drawings
 4. Delivered, properly executed, the following:
 - a. Contractor's Affidavit

SECTION 01700

MOBILIZATION AND CONTRACT CLOSEOUT

- b. Statement of Surety Company (with Power of Attorney and Statement of Surety's Financial Conditions)
- c. Contractor's Release

3.7 BID AMOUNTS

- A. The lump sum price bid for Mobilization and Contract Closeout is limited to 8 percent of the base bid amount.

++END OF SECTION++

DIVISION TWO

SITE WORK

SECTION 02100
SITE PREPARATION

PART 1 - GENERAL

1.1 SCOPE

- A. Description of Work
 - 1. The Contractor shall provide all labor, material and equipment to perform all clearing and grubbing as shown on the Drawings and as specified herein.
- B. Related Work Specified Elsewhere
 - 1. Earthwork is included in Section 02200.
 - 2. Soil erosion and sediment control is included in Section 02900 and the Soil Erosion and Sediment Control Plan.

1.2 REGULATORY REQUIREMENTS

- A. Federal, state and local laws and code requirements shall control the disposal of trees and shrubs.

1.3 PROTECTION

- A. Streets, roads, adjacent property and other works to remain shall be protected throughout the work as defined in the General Conditions.
- B. Existing trees, shrubs and bushes designated to be preserved shall be protected as follows:
 - 1. Trees shall be protected by fencing, barricades, or wrapping as may be required.
 - 2. Shrubs and bushes shall be protected by fences or barricades as may be required.
 - 3. Shallow-rooted plants shall be protected at ground surface under and in some cases outside the spread of branches by fences, barricades, or ground cover protection as may be required.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials shall be at the Contractor's option.
- B. Present on-site materials excavated in the course of construction which are deemed suitable by the Engineer may be stored on the site for use as backfill.

SECTION 02100

SITE PREPARATION

PART 3 - EXECUTION

3.1 GENERAL DESCRIPTION

- A. All operations must be confined to the property of the Owner. All damage done to property resulting from the Contractor's negligence shall be repaired without charge to the satisfaction of the Owner with the exception of those items (trees, shrubs, etc.) that must be removed for construction and have been agreed upon beforehand, in writing, between the Contractor and the Owner. No clearing or grubbing of any kind shall occur anywhere on the Shipshewana Lake dam.

3.2 CLEARING

- A. Limits of clearing shall be kept to the minimum necessary to install the return water and dredge discharge pipelines, and deliver the dredge to the lake.
- B. Any trees in construction zones or Rights-of-Way shall not be removed until inspected and/or tagged by the Owner or the Owner's representative. No trees shall be removed within the construction zone or Rights-of-Way except the following:
1. Trees that interfere with the movement of the Contractor's equipment, with the approval of the Engineer. Any trees that interfere with the movement of the Contractor's equipment shall be reviewed by the Engineer before they are removed.
 2. Trees that interfere with the return water and dredge discharge pipelines.
- C. All trees bordering any construction zone or Right-of-Way shall be protected by acceptable methods. Trees damaged by the Contractor will be either repaired or replaced as determined by the Owner or his representative at the Contractor's expense.
- D. Vegetation within the areas to be cleared, which may be designated to be preserved by the Owner, shall be left standing and uninjured.
- E. Remove trees, saplings, shrubs, bushes, vines and undergrowth within the limits of clearing to the heights above ground given in the following table:
- | | | |
|----|---|-----------|
| 1. | Trees over six inches in diameter: | 12 inches |
| 2. | Shrubs, saplings, bushes, and trees under six inches in diameter: | 3 inches |
| 3. | Vines and undergrowth: | 2 inches |
- F. Stumps
1. Stumps required to be removed shall be removed to a depth of 18 inches. This depth shall be measured from the existing ground surface or the proposed finished grade, whichever is the lower.
 2. Engineering requirements shall control removal of stumps under fills, foundations, or any construction in contact with the stumps.

SECTION 02100

SITE PREPARATION

3. Stumps must be removed from the job site and disposed of in an approved site. No burning is permitted.

3.3 GRUBBING

- A. Limits of grubbing shall coincide with the limits of clearing.
- B. Remove all stumps, roots over 4-inches in diameter, and matted roots within the limits of grubbing to a depth of 18 inches, measured from the existing ground surface or the proposed finish grade, whichever is lower.

3.4 TRIMMING OF TREES

- A. When required, with the Owner's approval, trees shall be trimmed to remove branches or roots which interfere with construction or traffic. Paint all cut branches and roots with wound paint as recommended for the application.

3.5 SALVAGE

- A. Material which is to be salvaged, as a result of the clearing operations, shall include the following items which are to be turned over to the Owner if the Owner so desires:
 1. Logs over 12 inches, butt diameter.
 2. Branches over 6 inches, butt diameter.
 3. Parts suitable for use as mulch.
 4. Live plants suitable for replanting.
- B. All salvageable material not desired by the Owner shall be removed as part of the work.

3.6 DISPOSAL

- A. Burning or burying of materials on site will not be permitted.
- B. Material to be removed shall be removed from the site weekly as it accumulates.
- C. Prior to depositing surplus material at any off-site location, the Contractor shall obtain a written agreement between himself/herself and the owner of the property on which the disposal is proposed. The agreement shall state that the owner of the property gives permission for the Contractor to enter and deposit the material at no expense to the project Owner. A copy of the agreement shall be furnished to the Owner. Contractor's disposal shall comply with all Federal, State, and Local laws and regulations.

++END OF SECTION++

SECTION 02140

SEDIMENT DEWATERING OPERATIONS

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. The Contractor shall provide all labor, materials and equipment necessary to furnish, install, operate and remove the sediment dewatering equipment as indicated on the Contract Drawings and as specified herein.
2. Prior to bidding on this project, the Contractor shall collect a sediment sample and run any necessary tests to determine the effectiveness of dewatering, based on their dewatering process. Based on preliminary testing, the sediment is approximately 70% sand and 30% silts and clays. Also based on preliminary testing, a cationic polymer may be required for flocculating the sediment. If this is the case, the return water will require filtering to ensure that no cationic polymer is discharged back into the lake.

B. Related Work Specified Elsewhere

1. Earthwork is included in Section 02200.
2. Hydraulic dredging is included in Section 02482.
3. Return water pipeline is included in Section 02700.
4. Soil erosion and sediment control is included in Section 02270 and the approved Soil Erosion and Sediment Control Plan.

1.2 SUBMITTALS

- A. Ten (10) days before installation, the Contractor shall submit construction drawings illustrating the sediment dewatering equipment to the Engineer in accordance with Section 01300. This submittal shall be for Engineer approval.
- B. Ten (10) days before dredging begins, the Contractor shall submit the name, address, phone number and Indiana laboratory certification number of the laboratory that will analyze the weekly return water quality samples to the Engineer in accordance with Section 01300. Within four (4) days of receiving return water quality testing results, the Contractor shall submit a copy of the results to the Engineer with the corresponding Return Water Quality Data Form in accordance with Section 01300. These submissions shall be for Engineer review.

PART 2 - PRODUCTS

2.1 SEDIMENT DEWATERING EQUIPMENT

- A. The sediment dewatering equipment shall handle dredge slurry at a flow rate of 800-1200 gallons per minute and a solids concentration of 10-18% (by weight).

SECTION 02140

SEDIMENT DEWATERING OPERATIONS

- B. The sediment dewatering equipment inlet shall match the pipe diameter of the dredge discharge pipeline and the sediment dewatering equipment outlet shall match the pipe diameter of the return water pipeline.

PART 3 - EXECUTION

3.1 INSTALLATION AND MAINTENANCE

- A. The Contractor shall install the sediment dewatering equipment in the sediment disposal area at the location indicated on the Contract Drawings or at an alternate location approved by the Engineer. The Contractor shall maintain the equipment in good working order throughout the contract period.

3.2 OPERATION

- A. The Contractor shall operate the sediment dewatering equipment according to the manufacturer's operating manual. The equipment shall be operated so that the return water meets the IDEM Water Quality Certification requirement of 50 milligrams per liter total suspended solids (TSS). In the event that the return water sample results show a total suspended solids concentration greater than 50 mg/L, the Contractor shall cease sediment dewatering. The Contractor shall submit to the Engineer, for approval, a proposed course of action to decrease the total suspended solids concentration of the return water. The Contractor may not resume sediment dewatering until the Engineer has approved the proposed course of action.
- B. Continuous sediment dewatering equipment is preferred. If a holding tank or holding basin is required for the operation of the dewatering equipment, the Contractor shall be responsible for the design, operation and maintenance of such holding units. If a basin is used, it shall be located within the limits of the dewatering area, as shown on the plans. The basin shall be reviewed by the ENGINEER, and the Contractor shall be required to pay for the review of the basin. Any basins constructed as part of this project shall be removed after the dewatering operations are completed.

3.3 RETURN WATER QUALITY MONITORING

- A. The Contractor shall collect a return water sample from the return water pipeline outlet on a weekly basis. The first sample shall be collected the day the sediment dewatering equipment begins producing return water at its design flow. The samples shall be collected when the sediment dewatering equipment is operating at its design flow. The samples shall be analyzed for total suspended solids (TSS) concentrations by an Indiana certified water quality laboratory. All sampling data shall be recorded by the Contractor and furnished to the Engineer on the Return Water Quality Data Form included on the last page of this Section of the specifications. The Contractor shall submit a copy of the TSS results from the laboratory to the Engineer with the Return Water Quality Data Form.

3.4 REMOVAL

SECTION 02140

SEDIMENT DEWATERING OPERATIONS

- A. The sediment dewatering equipment shall be removed from the sediment disposal area upon the completion of sediment dewatering.

3.5 ODOR CONTROL

- A. Odor control shall be provided by the Contractor, if deemed necessary by the Engineer once dredging operations commence. The Contractor shall use a non-toxic deodorizing agent such as those supplied by ECOLO SYSTEMS, MONSANTO ENVIRO-Chem Systems, Inc. or approved equivalent. The Contractor shall be responsible for providing and installing all appurtenant and ancillary equipment not provided by the manufacturer, as well as constructing temporary electric service to power any odor control equipment. Odor control shall be maintained as long as deemed necessary by ENGINEER, and shall be stopped only after receiving approval from the ENGINEER.

3.6 SEDIMENT DISPOSAL

- B. The dewatered sediment shall be used as fill in the sediment dewatering area and shall be graded as shown on the erosion and sediment control plan. Excess sediment shall be stockpiled in the area shown on the plans and shall be removed by the Owner.

++END OF SECTION++

SECTION 02140
SEDIMENT DEWATERING OPERATIONS
RETURN WATER QUALITY DATA FORM

1. Date of sample collection _____
2. Time of sample collection _____ AM PM (circle one)
3. Total suspended solids concentration in return water sample _____ (mg/l) *
4. Sample collected by _____
5. Comments _____

CONTRACTOR'S CERTIFICATION: I hereby certify that the above report is complete and correct and that all material and equipment used and work performed during this reporting period were in strict compliance with the Contract Drawings and specifications except as noted above.

CONTRACTOR'S AUTHORIZED REPRESENTATIVE

* Attach the report from the Indiana certified water quality laboratory to this form.

SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. The Contractor shall perform work necessary pertaining to earthwork for the sediment disposal area, pipelines and elsewhere as shown on the Drawings and as specified herein.
2. All work performed and materials furnished shall conform to the lines, grades, cross-sections, dimensions, details, gradation and physical requirements indicated on the Drawings and as called for in the Specifications. All earthwork performed and materials furnished shall be items of controlled inspection by the Engineer.
3. All excavation is unclassified.

B. Related Work Specified Elsewhere

1. Construction access route improvement is included in Section 01550.
2. Clearing and grubbing is included in Section 02100.
3. Return water pipelines are included in Section 02700.
4. Soil erosion and sediment control is included in Section 02270 and the approved Soil Erosion and Sediment Control Plan.
5. The Sequence of Construction is included in the approved Soil Erosion and Sediment Control Plan.

1.2 SUBMITTALS

- A. Ten (10) days before beginning any earthwork, the General Contractor shall submit to the Engineer the following in accordance with Section 01300:
 1. Numbers and types of compacting equipment to be used.
 2. Starting date of earthwork operations.

1.3 APPLICABLE STANDARDS

- A. ASTM D1556, "Test for Density of Soil in Place by the Sand-Cone Method"
- B. ASTM D1557 or AASHTO T-180, "Tests for Moisture-Density Relations of Soils, using 1 lb. Rammer and 18 in. Drop"
- C. ASTM D2216, "Laboratory Determination of Moisture Content of Soil"
- D. ASTM D2922, "Test for Density of Soil and Aggregate in Place by Nuclear Method (Shallow depth)"

SECTION 02200

EARTHWORK

- E. Occupational Health and Safety Act

1.4 SAFETY REQUIREMENTS

- A. Provide and maintain barricades, signs, lights, etc. as required to protect the public.
- B. Excavation Near Existing Structures
 - 1. Excavation near structures will not be allowed closer to the structure than the depth of the excavation below the existing structure foundation plus two (2) feet without shoring the excavation with sheeting.
- C. Underground Utilities
 - 1. Attention is directed to the fact that there may be water lines, drains, sewer lines and other utilities in certain locations. Some of these have been indicated on the Drawings, but no attempt has been made to show all of the services, and the completeness or accuracy of the information given is not guaranteed.
- D. Mud, Dirt and Debris
 - 1. During the progress of the work, the Contractor shall conduct operations and maintain the area of activity so as to minimize the creation and dispersion of dust.
 - 2. The Contractor shall maintain existing access roads and facilities free of mud, dirt and debris.

1.5 CARE AND RESTORATION OF PROPERTY

- A. Excavating machinery shall be operated with care to prevent damage to existing structures and/or wires.
- B. On paved surfaces, the Contractor shall not use or operate tractors, bulldozers, or other power operated equipment.
- C. All surfaces which have been damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations. Suitable materials and methods shall be used for such restoration.
- D. The restoration of existing property or structures shall be done as soon as possible and shall not be left until the end of the construction period.
- E. All work shall conform to the above and to Sections 02520 and 02900 of these specifications.

SECTION 02200

EARTHWORK

PART 2 - PRODUCTS

2.1 MATERIALS - GENERAL

- A. All material shall be of such nature that after it has been placed and properly compacted, it will make a dense, stable fill. It shall not contain vegetation, cinders, ashes, refuse, masses of roots, stones larger than sizes allowed in the following paragraph, or porous matter. Organic matter shall not exceed minor quantities and shall be well distributed.

2.2 SUITABLE MATERIALS

- A. General
 - 1. Suitable material, when used as backfill, shall be capable of being compacted as specified in Placement and Compaction of this Section of these Specifications.
 - 2. Timber, logs, brush, rubbish, rocks, stumps and vegetative matter which will interfere with the spreading operation or affect the planned stability of the disposal area shall be removed and disposed of off-site.

2.3 DEWATERED SEDIMENT

- A. Dewatered sediment shall consist of material dredged from Shipshewana Lake in accordance with the dredging plan and dewatered in accordance with the specifications.
- B. Dewatered sediment may be used for sediment disposal area grading.

2.4 GENERAL FILL

- A. General fill shall consist of material excavated from the site or materials from other sources which are free from large clods, roots, or stones larger than 6 inches.
- B. General fill may be used for site grading.

2.5 TOPSOIL

- A. Topsoil shall be designated as Class A (imported), Class B (selected) or Class C (unclassified).
- B. Class A topsoil shall be from a source outside the limits of the project selected by the Contractor and in compliance with the requirements specified herein. Class A topsoil shall have the same relative composition and structure, a friable sandy loam character, and be free of roots, clods, and stones larger than 1 inch in greatest dimension, pockets of coarse sand, noxious weeds, sticks, brush and other litter. Class A topsoil shall not be infested with nematodes or other undesirable insects and plant disease organisms. Class A topsoil shall meet the following additional requirements:

SECTION 02200

EARTHWORK

1. Gradation limits: Sand, 50-80%, clay, 20% maximum, and silt, 30% maximum. The sand, clay and silt gradation limits shall be as defined in ASTM D422.
 2. Permeability rate; Not less than 0.5 inches per hour nor more than 2 inches per hour when tested in accordance with ASTM D2434, Calif. Test 220, or other approved methods.
 3. Agricultural suitability: The topsoil shall be suitable to sustain the growth of the plants specified.
- C. Class B topsoil is topsoil stripped from the site.
- D. Topsoil shall not be delivered to the site in frozen or muddy condition.

PART 3 - EXECUTION

3.1 GENERAL DESCRIPTION

- A. The Contractor shall not initiate any earth disturbance until the approved Soil Erosion and Sediment Control Plan has been implemented. The Contractor shall follow the Sequence of Construction included in the approved Soil Erosion and Sediment Control Plan.
- B. The Contractor shall be solely responsible for the stability of excavations and embankments for the duration of the Contract Time. The Contractor shall provide all sheeting, shoring, bracing, etc., required to retain excavations and embankments.
- C. All excavation, dewatering, sheeting, and bracing shall be carried out in such manner as to eliminate any possibility of undermining or disturbing the foundations of any existing structure or any work previously completed under this Contract.
- D. Where damage is liable to result from withdrawing sheeting, the sheeting shall be left in place. Sheeting shall be left in place only when agreed to or requested by the Engineer.
- E. Excavated, unsuitable and excess material can be disposed of at a location approved by the Owner. Any excavated material, deemed suitable by the Engineer, may be reused as backfill if authorized by the Engineer.
- F. The Contractor shall provide and operate pumping equipment necessary to maintain all excavations free of subsurface and stormwater as required during construction. Dispose of pumped water as permitted by the Engineer in such a manner that operation and storage areas and other facilities are not flooded.
- G. If the Contractor excavates below the elevations specified, or wherever the excavation is carried beyond the lines and grades specified, the Contractor shall bring the excavation back to the proper elevation by backfilling with fill placed in accordance with paragraph 3.12 of this Section.- This work shall be done at the Contractor's expense.

SECTION 02200

EARTHWORK

- H. Any increase in cost resulting from backfilling or increasing the size of the footings or foundations due to excess excavation in depth which was not authorized by the Engineer shall be borne by the Contractor.

3.2 SHEETING AND BRACING

- A. Where necessary, particularly for safety or to prevent disturbance, damage or settlement of adjacent structures, pipelines, utilities, improvements or paving, excavations shall be sheeted and braced. Any damage to new or existing structures occurring through settlement, water or earth pressure, or other causes due to inadequate bracing, through negligence or fault of the Contractor in any other manner, shall be repaired by the Contractor at the Contractor's expense.
- B. Where trenches or excavations exceed 5 feet in depth, the Contractor shall, in advance of the start of the work, submit installation and excavation procedures to the Engineer for review. The information shall include complete details and descriptive data of materials and installation procedures for sheeting and bracing, trench boxes and excavation of side slopes as proposed to be used.
- C. Where sheeting or trench boxes are used, they must be designed by an Indiana Licensed Professional Engineer (I.P.E.). The I.P.E. shall provide the Contractor with certification signed and sealed by himself stating that the design of the sheeting and bracing conforms to all applicable requirements of the Indiana Construction Safety Code and the Occupational Health and Safety Act. Copies of this certification shall be submitted to the Engineer.
- D. The Contractor must follow the proposed sheeting plans submitted. No deviations may be made from the filed procedure without first submitting a revised sheeting and bracing plan, signed and certified as required for the original submission, by the same I.J.P.E. who prepared the original submission.
- E. All sheeting and bracing not to be left in place shall be carefully removed in such a manner as not to endanger the construction or other structures. All voids left or caused by withdrawal of sheeting shall be immediately backfilled with well-compacted material.
- F. Sheeting Left in Place
 1. To prevent subsequent damage to structures or property, it may be necessary to leave sheeting, bracing, etc. in place to be embedded in backfill or concrete.
 2. Materials used for sheeting and bracing may have to be cut off at any specified elevation due to job conditions.

3.3 DRAINAGE

- A. At all times during construction, the Contractor shall provide, install and maintain ample means and devices with which to remove promptly and dispose of properly all water entering trenches and other excavations, or water that may flow along or across the site of the work and keep said excavations dry until the structures, pipes, and such appurtenances to be built therein have been completed to such extent that they will not float or be damaged.

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EARTHWORK

- B. Water pumped or drained from the trenches shall be disposed of without undue interference with the work or damage to pavement, other surfaces, or property.
- C. Where required, water pumped from dewatering operations shall be discharged into temporary sedimentation ponds prior to being discharged.
- D. Dewatering operations shall be maintained until such time that there is no danger of floatation of structures.
- E. Subgrades may be subject to deterioration due to wet conditions and construction activities. Contractor shall maintain dewatering operations to prevent disturbance of the subgrade during construction.
- F. Provisions shall be made by the Contractor to safely conduct surface water to suitable water courses and to prevent surface runoff from damaging cut surfaces and fill slopes.

3.4 LOCATION AND PROTECTION OF EXISTING UTILITY LINES

- A. All utility lines shall be located on the ground with pipe locating equipment well ahead of the work at all times. All such locations shall be plainly marked by coded paint symbols on pavement or by marked stakes in the ground. Such locations shall be established at least 50 feet in advance of all excavation. All such location work shall be provided at no extra cost.
- B. As the excavation approaches pipes, conduits, or other underground structures, digging by conventional trenching machine methods shall be done with extreme care. No extra compensation shall be given if manual excavation is done to locate utilities and/or underground structures.
- C. All existing pipes, wires, fences, curbs, property-line markers, and other structures which in the opinion of the Engineer must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage, and in case of damage, the Contractor shall notify the "property owner" so that proper steps may be taken to repair any and all damage done. When the "property owner" does not wish to make the repairs themselves, all damage shall be repaired by the Contractor or, if not promptly done by the Contractor, the Engineer may have the repairs made at the expense of the Contractor.
- D. All utility services shall be supported by suitable means so that the services do not fail when tamping and settling occur.

3.5 RELOCATION AND REPLACEMENT OF EXISTING UTILITY LINES

- A. If, in the course of construction, the Contractor encounters utility services of any kind not indicated on the Drawings (or otherwise provided for) which encroach upon or are encountered near and substantially parallel to the edge of the excavation and in the opinion of the Engineer will impede progress to such an extent that satisfactory construction cannot proceed, they shall be changed in location, removed (later be restored), or replaced as follows:

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EARTHWORK

1. Whenever the Contractor encounters any of the conditions as described above and is so ordered in writing, he shall do all or part of the work as directed to, change the location, remove and later restore, or replace lines, or to assist the Owner thereof in so doing. For such work, the Contractor shall be issued a Change Order for extra work.
 2. In removing existing pipes or as described above, the Contractor shall use care to avoid damage to material. The Engineer shall include for payment only those new materials which, in his judgment, are necessary to replace those that are unavoidably damaged.
- B. When fences interfere with the Contractor's operations, the Contractor shall remove and (unless otherwise specified) later restore them to at least as good condition as that in which they were found immediately before the work was started. This work shall be performed without additional compensation. The restoration of fences shall be done as promptly as possible and not left until the end of the construction period.

3.6 REMOVAL OF EXISTING STRUCTURES

- A. All elements of any existing structures, including piping and backfill, shall be removed from beneath the footprint of each new structure and new pipes and within an area which extends downward and outward from each new structure at a slope of 1 horizontal to 1 vertical.

3.7 EXCAVATION

- A. Excavate to the exact elevations shown on the Drawings or as required by job conditions.
- B. If the Contractor excavates below the elevations specified, the Contractor shall bring the excavation back to the proper elevation by backfilling with structural fill placed in accordance with the paragraph 3.9 of this Section.
- C. Any increase in cost resulting from backfilling or increasing the size of the footings or foundations due to excess excavation in depth which was not authorized by the Engineer shall be borne by the Contractor.

3.8 BACKFILLING - GENERAL

- A. Complete all backfilling to the dimensions and levels shown on the Drawings.
- B. Excavations shall be backfilled as specified herein.
- C. Excavations made in areas where structural fill has been placed shall be backfilled with the same material as removed.
- D. Backfilling shall be done as promptly as is consistent with non-damage to the structures, but no backfilling shall be done before the Engineer gives permission.

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- E. Frozen material shall not be placed in the backfill, nor shall backfill be placed upon frozen material. Previously frozen material shall be removed or shall be otherwise treated as required before new backfill is placed.
- F. Below grade structures shall not be backfilled until any supporting floor slabs or other structural systems are in place.
- G. Backfilling around structures shall be accomplished with uniform horizontal lifts of material. The difference in elevation of the backfill on opposite and/or adjacent walls shall not at any time exceed one foot.
- H. All backfill shall be placed in accordance with paragraph 3.9 below.

3.9 PLACEMENT AND COMPACTION

- A. General
 - 1. Placement and compaction of material shall begin only after permission has been given by the Engineer. No material shall be placed or compacted when it is too wet or frozen or when the subgrade or previously placed material is too wet or frozen. All loam and topsoil, sludge and other material judged to be unsuitable by the Geotechnical Engineer shall be removed before any material is placed and compacted.
 - 2. The County shall be able to remove dewatered sediment from the sediment disposal area at its own expense for use elsewhere, as long as such removal occurs before the final grading of the sediment disposal area.
- B. Site Filling and Grading
 - 1. Any site grading required, such as the dredge access area, shall be accomplished by the placement of general fill. If the Drawings call for the removal of certain undesirable materials, this shall be done prior to placement of general fill.
 - 2. The general fill shall be placed in loose horizontal lifts with a maximum thickness of nine (9) inches.
 - 3. The fill shall be compacted using compaction equipment corresponding to the characteristics of the general fill.
 - 4. Class A or B topsoil shall be placed at a thickness of at least six (6) inches.
- C. Final Grading
 - 1. Final grading of the sediment disposal area shall be accomplished by grading the dewatered sediment to as close to the grades shown on the final grading plan as possible. Final grading shall be performed after sediments have dewatered sufficiently to support the heavy construction equipment necessary to perform the grading.

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EARTHWORK

2. The dewatered sediment shall be placed in loose horizontal lifts with a maximum thickness of nine (9) inches.
4. The dewatered sediment shall be compacted using compaction equipment corresponding to the characteristics of the fill. The fill shall be compacted at or near optimum moisture content to at least 90% of the maximum density except where the fill must support piping, paving, etc., in which case compaction shall be at least 95% of the maximum density.

3.10 MAINTENANCE OF FILLS

- A. All vehicles passing over the fill areas shall use diverse routes to insure uniform compaction of the fill.
- B. Before shutdown of the work for any cause and at the conclusion of work for the day, fill shall be shaped to a grade which will insure drainage away from the unfinished surface of the fill.
- C. Excess materials shall be stored as authorized by the Engineer and following completion of the work shall be removed from the site.

3.11 EARTHWORK TESTS AND TESTING

- A. The optimum moisture content and the maximum density of each type of material used for final grading and general fill shall be determined by "Tests for Moisture-Density Relations of Soils, using 1 lb. Rammer and 18 in. Drop", (ASTM D1557 or AASHTO T-180).
- B. The field moisture content of materials being compacted shall be determined by "Laboratory Determination of Moisture Content of Soil", (ASTM D2216). The field density of compacted material shall be determined by "Test for Density of Soil in Place by the Sand-Cone Method", (ASTM D1556) or "Test for Density of Soil and Aggregate in Place by Nuclear Method (Shallow depth)", (ASTM D-2922).
- C. The Contractor shall be responsible for arranging all necessary testing.
- D. A soils engineering and testing laboratory will be selected by the Contractor and approved by the Engineer prior to any materials testing. The selected soils engineering and testing laboratory shall perform all materials testing and shall be paid by the Contractor. The soils engineering and testing laboratory must promptly, faithfully and accurately report the results of its tests and inspections. Typed results and discussions shall be sent in duplicate to the Engineer at F. X. Browne, Inc., P.O. Box 401, Lansdale, PA 19446, with a copy to the Contractor. The Contractor shall submit a report to the Engineer stating whether the reported results comply with the specifications.

3.12 DISPOSAL OF MATERIAL

- A. Excavated material shall be so placed as not to unreasonably interfere with travel. All macadam, surface loam and sod shall be kept separate from the remainder of the excavated material.

SECTION 02200

EARTHWORK

- B. Upon completion of the backfilling, the property shall be cleaned, all surplus material removed, and the surface restored to the condition in which it was before ground was broken.
- C. Unless otherwise specified, all materials left over shall become the property of the Contractor. Also, underground structures removed, such as brick, concrete and sewer pipe, shall become the property of the Contractor, unless otherwise noted on the Drawings. If the Contractor shall fail to promptly remove surplus material, the Owner may have the material removed and charge the cost thereof as money paid to the Contractor. All surplus excavation shall be removed from the site of the work by the Contractor, but none shall be deposited on private property until written consent of the property owner has been filed with the Engineer. The Contractor's disposal shall comply with all Federal, State and Local laws and regulations.

++ END OF SECTION ++

SECTION 02205

CLAY PIT AREA GRADING

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. If the Clay Pit area grading bid item is accepted, the Contractor shall use dewatered sediment to restore a previously mined area of the Watchung Reservation. Clay Pit area grading shall include providing soil erosion and sediment control measures in the Clay Pit area, hauling dewatered sediment from the sediment disposal area to the Clay Pit area, and grading the dewatered sediment according to the Contract Drawings.

B. Related Work Specified Elsewhere

1. Construction access route improvement is included in Section 01550.
2. Clearing and grubbing is included in Section 02100.
3. Earthwork is included in Section 02200.
4. Soil erosion and sediment control is included in Section 02270 and the approved Soil Erosion and Sediment Control Plan.

1.2 SUBMITTALS

- ###### **A.**
- Ten (10) days before beginning any earthwork, the General Contractor shall submit to the Engineer the following, in accordance with Section 01300:

1. Numbers and types of compacting equipment to be used.
2. Starting date of earthwork operations.

PART 2 - PRODUCTS

2.1 MATERIALS

- ###### **A.**
- Materials shall be as specified in Sections 02200 and 02900 and as indicated on the Contract Drawings.

SECTION 02205

CLAY PIT AREA GRADING

PART 3 - EXECUTION

3.1 SITE PREPARATION

- A. The construction access route shall be improved between the sediment disposal area and the Clay Pit area as specified in Section 01550. Silt fence shall be installed downslope of the Clay Pit area as shown on the Contract Drawings. The Clay Pit area shall be cleared and grubbed, as necessary.

3.2 HAULING

- A. Dewatered sediment shall be hauled from the sediment disposal area to the Clay Pit area via the construction access route.

3.3 GRADING

- A. The Clay Pit area shall be graded according to the Contract Drawings and Section 02200.

3.4 RESTORATION

- A. The Clay Pit area shall be fertilized, rolled and stabilized according to Section 02270 and the approved Soil Erosion and Sediment Control Plan.

++ END OF SECTION ++

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. Erosion control is required for all work. Soil erosion control consists of mechanical and vegetative type measures taken by the Contractor to prevent erosion from occurring during the prosecution of the work.
2. All erosion control measures are to be considered only temporary and will not substitute for subsequent landscaping, final seeding or other plantings.
3. The Contractor shall be responsible to comply with all aspects of 327 IAC, Rule 5, "Stormwater Run-off Associated with Construction Activity". The Owner has obtained Rule 5 approval from the Indiana Department of Environmental Management (IDEM). The Contractor shall be responsible for compliance with this Law throughout the construction period and shall pay any and all fines resulting from violation, suit or penalty for non-compliance.
4. The Contractor shall notify the LaGrange County Conservation District, in writing, prior to any land disturbance.

B. Related Work Specified Elsewhere

1. Clearing and grubbing is included in Section 02100.
2. Earthwork is included in Section 02200.

1.2 SUBMITTALS

- A. Within seven (7) days after Award of Contract, submit proposed names of fertilizers, sod and seed mixtures together with their composition and application rates to the Engineer for review in accordance with Section 01300. Copies of any recommendations made by a Local State Agricultural Agent concerning Class A topsoil shall be submitted to the Engineer for review.
- B. Ten (10) days before installing the riprap apron, the Contractor shall submit to the Engineer, for approval, shop drawings showing any revisions to the riprap apron design and calculations verifying that the riprap apron will protect the return water pipeline outlet from the erosive forces of the return water flow.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

1.3 APPLICABLE STANDARDS

- A. The Indiana Handbook for Erosion Control in Developing Areas, latest edition. Copies are available from the Indiana Department of Environmental Management, Office of Water Management, Stormwater Group, Permits Section, P.O. Box 6015, Indianapolis, IN 46204-6015, Phone (317) 232-8704.

1.4 RECOMMENDATION OF AGRICULTURAL AGENT

- A. Two (2) one-pint samples from each source of Class A topsoil proposed for use on the site shall be forwarded to the Local State Agricultural Agent for recommendations as to types and quantities of soil conditions, fertilizers, and seed mixtures to be applied for a dense, vigorous growth of grass. If a better seed is recommended by the Agricultural Agent than the minimum specified in the Soil Erosion and Sediment Control Plan, then the Agricultural Agent's recommendation will govern.

PART 2 - PRODUCTS

2.1 MATERIALS - GENERAL

- A. All products and materials shall meet the requirements of the approved Soil Erosion and Sediment Control Plan, the Indiana Handbook for Erosion Control in Developing Areas, or as specified elsewhere in these Specifications.

2.2 SOIL CONDITIONERS AND FERTILIZERS

- A. Soil conditioners and fertilizers shall be of the composition as recommended by the Agricultural Agent or as specified in the Soil Erosion and Sediment Control Plan.

2.3 SEED

- A. Temporary and permanent seed shall be of the composition recommended by the Agricultural Agent or as specified in the Soil Erosion and Sediment Control Plan.
- B. Seed shall be of an approved mixture, new crop, clean, high in germinating value and low in weed seed. Seed shall be obtained from a reliable seed company and shall be accomplished by certificates relative to mixture purity and germinating value.

2.4 STRAW BALES

- A. Straw bales shall be new, firm, and well compacted straw bales bound with wire or nylon.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

PART 3 - EXECUTION

3.1 PLANNING OF CONSTRUCTION

- A. Planning and coordination of the construction is needed to reduce sediment pollution. Accurate planning shall be used to minimize the area of disturbance.
- B. Restoration work shall be done as the project progresses and not be left until the end of the project. No areas shall be left unprotected for more than 30 days.
- C. All areas on which final grading is completed after October 1st must be protected by a well anchored mulch until the spring, when effective seeding or planting can be undertaken.

3.2 TRAFFIC CONTROL

- A. Minimization of the area of disturbance also involves traffic control. Corridors for equipment travel shall be established to protect those areas that will not be denuded. Instructions shall be issued that routes for convenience shall not be allowed and that established equipment travel corridors must be used. These instructions must be enforced. Traffic shall be kept to an absolute minimum. Delivery of material will be required and this traffic shall enter and leave on a designated access route. Passenger vehicle traffic shall be discouraged. Workmen shall walk from the street rather than drive and they shall park on stabilized areas whenever possible. The filtering of sediment-laden runoff by vegetation is an important measure in the reduction of sediment delivered to downstream areas and it must be preserved. Indiscriminate and convenience travel shall not be allowed to destroy these natural filter areas.

3.3 SOIL EROSION AND SEDIMENT CONTROL MEASURES

- A. Soil Erosion and Sediment Control measures shall be implemented as specified in the approved Soil Erosion and Sediment Control Plan. These measures include a stabilized construction entrance, silt fencing, diversion channels, temporary and permanent vegetative cover, a riprap apron, earth slope protection, channel protection, existing vegetation preservation, and excavation dewatering filtration. All measures shall conform to the Standards for Soil Erosion and Sediment Control in Indiana.

3.4 RIPRAP BASIN

- A. A riprap basin shall be installed at the return water pipeline outlet. Filter fabric shall be placed under the riprap basin to prevent the stone from compacting the underlying soil. The riprap basin shall be placed in the location specified on the Contract Drawings. The riprap shall be R-2 stone and shall be reasonably well graded by the Contractor. The riprap apron shall be constructed by placing a three inch thick layer of gravel on top of the filter fabric and then placing a two thick layer of riprap over the gravel. The elevation of the riprap apron shall be no higher than the outfall pipeline invert elevation.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

3.5 SILT FENCE

A. Materials

1. Geotextile fabric fence materials for construction of a vertical sediment control fence shall be only those fabric types specified for such use by the manufacturer.
2. The silt fence shall be installed and maintained according to the requirements of the Indiana Handbook for Erosion Control in Developing Areas.

B. This sediment barrier is designed for situations in which only sheet or overland flows are expected.

1. The height of a silt fence shall not exceed 36 inches (higher fences may impound volumes of water sufficient to cause failure of the structure.)
2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6- inch overlap, and securely sealed.
3. Posts shall be spaced a maximum of 8 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches).
4. A trench shall be excavated approximately 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier with little, if any disturbance to the downslope side of the trench.
5. Filter fabric shall not be staples to existing tree.
6. The trench shall be backfilled and the fill compacted over the filter fabric.
7. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

3.6 STABILIZED CONSTRUCTION ENTRANCE

- A. At all locations where construction will enter paved roads from unpaved areas, a stabilized construction entrance shall be provided to prevent the tracking or flow of sediment onto paved areas. Construction entrances shall be installed and maintained according to the specifications in the Indiana Handbook for Erosion Control in Developing Areas.

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SOIL EROSION AND SEDIMENT CONTROL

3.7 FERTILIZING AND ROLLING

- A. Soil conditioners and fertilizers shall be spread and thoroughly worked into the topsoil, if required, in accordance with the Soil Erosion and Sediment Control Plan or recommendations of the Agricultural Agent. Then the topsoil shall be raked until the surface is finely pulverized and smooth and shall be compacted with rollers, weighing not over 100 pounds per linear foot of tread, to an even surface conforming to the prescribed lines and grades. Minimum depth shall be 6 inches after compaction.

3.8 TEMPORARY STABILIZATION

- A. Temporary stabilization shall be implemented when disturbed areas will not be constructed upon or stabilized within a 30-day period, or if final grading is completed during a nongrowing season. Temporary stabilization shall be implemented within 7 days after backfilling and grading if permanent stabilization is not to be implemented promptly.
 - 1. Temporary vegetative cover shall be provided on stockpiles in existence over 30 days and in all other disturbed areas where permanent seeding will not be done within 30 days. Temporary seeding shall be stabilized with mulch until vegetation is established.
 - a. Fertilizer: Apply 10-20-10 fertilizer or equivalent at the rate of 11 lbs./1,000 sq. ft. according to the Standards for Soil Erosion and Sediment Control in Indiana.
 - b. Limestone: Apply limestone, equivalent to 50% calcium plus magnesium oxides, at the rate of 135 lbs./1,000 sq. ft. according to the Standards for Soil Erosion and Sediment Control in Indiana.
 - c. Seed: Apply annual ryegrass at the rate of 40 lbs./acre according to the Standards for Soil Erosion and Sediment Control in Indiana. Optimum seeding dates are March 1 through May 15 or August 15 through October 1.
 - d. Mulch: Apply salt hay or small grain straw at the rate of 70 to 90 lbs./1,000 sq. ft. according to the Standards for Soil Erosion and Sediment Control in Indiana. Mulch shall be secured by approved methods (i.e. peg and twine, mulch netting or liquid mulch binder).
 - 2. Mulching shall be provided at all disturbed areas to stabilize soil until vegetation is established. Mulching may be used alone as temporary stabilization during non-growing seasons or for up to 30 days during growing seasons. Mulching methods and materials shall conform to those specified in the Soil Erosion and Sediment Control Plan.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

3.9 PERMANENT STABILIZATION

- A. Permanent vegetation shall be established on all disturbed areas as soon as possible. If the completion of construction activities does not coincide with a growing season, or if permanent stabilization is not to be done promptly, temporary stabilization will be required as specified in paragraph 3.6 above. In all cases, sediment and erosion controls shall be implemented and maintained.
- B. Finish grading, topsoiling, seeding and/or sodding shall be as specified on the Drawings or in the appropriate specification section(s).
- C. Sod shall be installed where indicated on the Drawings and where required in the specifications.
- C. As a minimum, permanent vegetative cover shall be established by providing the following:
 - 1. Fertilizer: Apply 10-20-10 fertilizer or equivalent at the rate of 11 lbs./1,000 sq. ft. according to the Standards for Soil Erosion and Sediment Control in Indiana. In addition, 300 lbs./acre of 38-0-0 of slow release nitrogen or equivalent may be used in lieu of topdressing.
 - 2. Limestone: Apply limestone, equivalent to 50% calcium plus magnesium oxides, at the rate of 180 lbs./1,000 sq. ft. according to the Standards for Soil Erosion and Sediment Control in Indiana.
 - 3. Seed: Apply permanent seeding at the rate of 9 lbs./ac. according to the Standards for Soil Erosion and Sediment Control in Indiana. Optimum seeding dates are March 15 through June 1 and August 1 through September 15.
 - 4. Mulching, irrigation, and topdressing shall be done according to the Standards for Soil Erosion and Sediment Control in Indiana.

3.10 EXCAVATION AND BACKFILL

- A. Excavation for construction operations shall be closely controlled. The material removed from the excavation shall be selectively stockpiled in areas where a minimum of sediment will be generated and where other damage will not result from piled earth. Drainageways shall be protected at all times and the piling of soil in drainageways will not be allowed. Backfilling operations shall be performed in such a manner that remaining trees are not damaged.

3.11 STREAM PROTECTION

- A. Where construction is close to existing streams and other waterways, construction shall be performed in a manner which will not contribute to stream pollution. Construction practices shall include the following:

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

1. Construction debris, excavated materials, brush, rocks, refuse and topsoil shall be kept as distant from the stream as possible.
2. Stream crossings and machinery operation in streams is prohibited. Under no circumstances will a streambed be permitted to become a highway for machinery traffic.
3. The discharge of dredged or fill material shall not jeopardize a threatened or endangered species as identified under the Endangered Species Act, or destroy or adversely modify the critical habitat of such species.
4. The discharge of dredged or fill material shall consist of suitable material free from toxic pollutants in toxic amounts.
5. The fill created by the discharge of dredged or fill material shall be properly maintained to prevent erosion and other non-point sources of pollution.
6. The discharge of dredged or fill material shall not occur in a component of the National Wild and Scenic Rivers System, in a component of a State Wild and Scenic River System, nor in a river officially designated by Congress as a 'study river' for possible inclusion in the system, while the river is in an official study status.
7. The discharge of dredged or fill material shall not be located in the proximity of a public water supply intake.
8. The discharge of dredged or fill material shall not occur in areas of concentrated shellfish production.
9. The discharge of dredged or fill material shall not significantly disrupt the movement of those species of aquatic life indigenous to the waterbody.
10. The discharge of dredged or fill material shall not cause an unacceptable interference with navigation.
11. The discharge of dredged or fill material shall not impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
12. The discharge of dredged or fill material into waters of the United States shall be avoided or minimized through the use of other practical alternatives.
13. Discharges in spawning areas during spawning season shall be avoided.
14. Mats, pads, or other similar devices shall be used where crossings of wetland areas by construction equipment cannot be avoided.
15. Discharges into breeding and nesting areas for migratory waterfowl shall be avoided.
16. All temporary fills shall be removed in their entirety.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

17. Discharges in wetlands areas shall be avoided.
18. Discharges shall not restrict or impede the movement of aquatic species indigenous to the waters or the passage of normal or expected high flows or cause the relocation of the water.
19. If the discharge creates an impoundment of water, adverse impacts on the aquatic system caused by the accelerated passage of water and/or the restriction of its flow shall be minimized.
20. The maximum size utility line allowed is 36 inches in diameter.
21. All utility lines under streambeds shall be located such that there will be a minimum of three (3) feet of cover between the top of the utility line or encasement and the lowest point in the natural contour of the streambed, unless the utility line is in rock, where a minimum cover of one (1) foot shall be provided.
22. Trenches excavated for the installation of utility lines shall be the minimum width necessary. As soon as the utility line is installed and tested to ascertain no leakage, appropriate new or previously excavated backfill material shall be placed in the trench and the area restored to its original condition and elevation and stabilized. Backfill material stored in connection with the installation must be properly retained out of the floodway so as to prevent its discharge, washings or runoff from entering the waterway prior to its placement as backfill.
23. Adequate measures shall be used to prevent sedimentation from the trench from entering the stream.
24. The backfilling of the trench in which the pipe will be laid shall be done so as to eliminate the formation of a permanent ridge in the streambed.
25. During construction activities, all public and private property including existing vegetation, landscape features and monuments within, along and adjacent to the work area, shall be protected and preserved to the maximum degree possible. This shall include, but not be limited to, precautions taken to minimize damage, erosion, injury, or destruction; prevent pollution; provide protection of all trees and other woody plants; special care being taken to protect the natural vegetation and surroundings to include all natural drainageways, ponds, lakes, swamps, woods and fields; and storage of materials in such manner to prevent leaching which would be injurious to soils and to plants. Precautions should be taken to prevent damage to pipes, conduits and other underground structures.
26. Archaeological artifacts discovered during the performance of work must be adequately protected and their discovery promptly reported to the State of Indiana.
27. Original grades through wetlands must be restored after trenching and backfilling. Any excess fill material must be removed from the wetland and not spread on-site. Mounding of fill material to allow for settlement in the trench will be permitted in accordance with best construction methods.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

28. Deposition of dredged or excavated materials and all earthwork operations will be carried out in such a way as to minimize erosion of the material and preclude its entering into any wetland adjacent to the utility line crossing.
29. Utility line crossing of streams should be accomplished so that the line is at a right angle to the stream where possible, unless the crossing is installed on an existing bridge.
30. Whenever possible, in accordance with best construction methods utility line crossings are to be made 'in the dry' by installing sandbag and plastic dams and piping streamflow through the affected area.

3.12 STOCKPILES

- A. All stripped topsoil and excavated earthen material to be used within the project site shall be properly stockpiled. Stockpile areas shall be selected and maintained by Contractor's on-site personnel. Site selections and stockpile design shall incorporate sediment and erosion control facilities to prevent the potential direct production and delivery of sediment to waterways, damage to vegetation, and the unnecessary destruction of trees that are selected for preservation. Temporary or interim stabilization of soil stockpiles shall be promptly instituted. All soil that is to be stockpiled for a period of greater than 30 calendar days shall be temporarily stabilized. The existence of critical slopes on stockpiles shall be avoided. Stockpiling in or immediately adjacent to diversion channels will not be allowed because the stockpiled material may provide a direct and high volume source of sediment due to storm runoff. Structural practices shall be installed on large stockpiles. Their design and implementation shall be accomplished by competent on-site personnel.
- B. Temporary vegetative measures planned for implementation on stockpile areas shall be established immediately after the stockpile operation is completed. Proper mulching and soil stabilization in conjunction with seeding operations shall also be carried out.

3.13 INSPECTION AND ACCEPTANCE

- A. At the beginning of the planting season after that in which the permanent grass crop is sown, the seeded areas will be inspected. Any section not showing dense, vigorous growth at that time shall be promptly reseeded by the Contractor at the Contractor's expense.

3.14 MAINTENANCE

- A. Sediment and erosion control practices will not function properly throughout their designed life span if they are not maintained. Periodic inspections shall be made at sufficiently frequent intervals to detect any impairment in the ability of the erosion and sediment control facilities installed as part of this plan to continue to function effectively. Maintenance includes, but is not limited to, the repair of the diversion channels and the replacement of silt fence, if necessary.
- B. Most control structures require work to restore them after each storm. This maintenance shall be performed to allow the structure to continue to perform the function for which it was designed.

SECTION 02270

SOIL EROSION AND SEDIMENT CONTROL

- C. Vegetative practices require maintenance. Frequently, a stand of vegetative cover established in the sediment and erosion control program is allowed to deteriorate and become ineffective. A fertilization and reseeding program shall be established and carried out as the construction proceeds. Areas where failures have been experienced in the establishment of both permanent and temporary vegetative protection shall be promptly treated. The reestablishment of permanent vegetative cover shall be initiated as soon as possible in an effort to keep the area requiring maintenance work to a minimum.
- D. Information shall be distributed to all persons on the construction site describing and stressing the importance of the proper installation and maintenance of the erosion and sediment control procedures included in this plan. The actions and language of supervisors on the project shall continually emphasize the seriousness and importance of sound erosion and sediment control procedures.

++END OF SECTION++

SECTION 02482

HYDRAULIC DREDGING

PART 1 - GENERAL

1.1 SCOPE

- A. Description of Work
 - 1. The Contractor shall provide all labor, materials and equipment necessary for the hydraulic dredging of 250,000 cubic yards of unconsolidated sediment from Shipshewana Lake and the transportation of the dredged sediment slurry to the sediment dewatering equipment, as shown on the Contract Drawings and as specified herein.
 - 2. The Contractor shall provide, install, maintain and remove a floating turbidity barrier upstream of the Shipshewana Lake dam, as shown on the Contract Drawings and as specified herein.
- B. Related Work Specified Elsewhere
 - 1. Sediment dewatering operations are included in Section 02140.
 - 2. Dredge access area preparation is included in Section 02100 and the approved Soil Erosion and Sediment Control Plan

1.2 SUBMITTALS

- A. Ten (10) days before delivering the dredge to the site, the Contractor shall submit to the Engineer, for approval, a plan showing the proposed dredge access area and any Soil Erosion and Sediment Control measures or other improvements necessary for the delivery of the dredge .
- B. Ten (10) days before installation, the Contractor shall submit to the Engineer, for approval, plans illustrating the floating turbidity barrier in accordance with Section 01300.
- C. Ten (10) days before delivering the dredge discharge pipe to the site, the Contractor shall submit to the Engineer, for approval, the size and material of the pipe to be used.

1.3 HOURS OF OPERATION

- A. The hours of operation shall be 24 hours per day 7 days per week.

1.4 NOISE

- A. Noise caused by normal dredge operation shall conform to all applicable municipal noise control ordinances.

1.5 PERMITS

- A. The Shipshewana Lake Community Improvements Association Union County is responsible for obtaining all necessary permits and/or approvals related to the hydraulic dredging and the disposal of dredged sediments. These permits and/or approvals shall include, but not be

SECTION 02482

HYDRAULIC DREDGING

limited to: a Public Freshwater Lake Approval from the Indiana Department of Natural Resources, a Section 404 Individual Permit from the Army Corps of Engineers, Rule 5 Approval from the Indiana Department of Environmental Management, and a Section 401 Water Quality Certification from the Indiana Department of Environmental Management. Copies of all permits and/or approvals received to date are included in Appendix D. Copies of all permits and/or approvals received after the project has been put out for bid shall be provided to the Contractor as they are received. The Contractor shall familiarize himself with and perform all Work in accordance with all requirements and conditions of all permits and/or approvals. If additional permits and/or approvals become necessary to perform the work, the Contractor shall be responsible for obtaining all such permits and/or approvals.

PART 2 - PRODUCTS

2.1 HYDRAULIC DREDGING EQUIPMENT

- A. Plant: Plant and equipment employed on the work site shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in the specifications and shall be subject to inspection by the Engineer at all times. No reduction in the capacity of the plant employed on the work shall be made except by written permission of the Engineer. The measure of the "capacity of plant" shall be its actual performance on the work to which these specifications apply.
- B. Engine Horsepower: Shall be at least 100 HP or lower if capable of meeting the production rate as set forth by the Engineer. Engine can be configured as a single unit or as a booster unit located away from the dredging apparatus.
- C. Booster: If a booster unit is used, the booster pump area should be fenced and precautions shall be taken to protect the area should a fuel spill occur.
- D. Example Dredges: The Contractor may wish to use a portable cutterhead hydraulic dredge such as or equal to the Ellicott 370 rather than larger units which require extensive mobilization and equipment assembly and disassembly. However, it is not mandatory that a portable hydraulic dredge be used.

2.2 DREDGE DISCHARGE PIPELINE

- A. Pipeline: The dredge discharge pipeline shall be heavy wall constructed roll-flat butyl rubber or PVC line or an equivalent lightweight and durable pipe that will minimize friction loss. If the Contractor chooses to use pipeline other than that constructed out of the above recommended materials, then the Contractor shall document that the plant has enough power to meet the expected production rate. The dredge discharge pipeline shall have a diameter of 10 inches, 12 inches, or an approved alternate diameter.

2.3 FLOATING TURBIDITY BARRIER

- A. The floating turbidity barrier shall be Stillwaterscreen by IMS, INC or equal and shall conform to the details of the Contract Drawings.

SECTION 02482
HYDRAULIC DREDGING

PART 3 - EXECUTION

3.1 DREDGE ACCESS AREA

- A. The dredge may be assembled and launched from the area off of W. R. Tracy Drive. The dredge access area may be relocated with approval from the Engineer. Site preparation, including Soil Erosion and Sediment Control measures and clearing and grubbing shall be performed by the Contractor in accordance with the Soil Erosion and Sediment Control Plan and Section 02100.
- B. The dredge access area shall be restored to its original condition in accordance with the Soil Erosion and Sediment Control Plan, as soon as possible after dredging operations are complete and the dredge has been removed from the site.

3.2 FLOATING TURBIDITY BARRIER

- A. The Contractor shall install a floating turbidity barrier upstream of the Shipshewana Lake dam, at the location shown on the Contract Drawings, prior to the commencement of dredging operations. The barrier shall be approximately 250 feet in length and shall help to prevent the transport of sediment downstream of Shipshewana Lake.
- B. If turbidity in the Page Ditch below Shipshewana Lake becomes a problem, the Contractor shall install additional floating turbidity barrier near the return water pipeline outlet.
- C. The Contractor shall maintain the floating turbidity barrier during dredging operations.
- D. The floating turbidity barrier shall be removed from Shipshewana Lake upon completion of dredging operations.

3.3 DREDGE DISCHARGE PIPELINE

- A. The Contractor shall install the dredge discharge pipeline in the alignment shown on the Contract Drawings and shall connect the pipeline to the sediment dewatering equipment. The Contractor may use dredge discharge pipeline alignments in addition to those indicated on the Drawings, with prior approval from the Engineer.
- B. The dredge discharge pipeline shall be kept in good condition at all times, and inspected regularly, at least once every hour during hours of operation. Any leaks or breaks found along the length of the pipeline shall be promptly and properly repaired. All buoyant (plastic) dredge discharge pipelines shall be marked with floats or buoys to mark distinctly the entire length and course of the line.
- C. The dredge discharge pipeline shall be disassembled, disconnected from the sediment dewatering equipment and removed from its alignment upon completion of dredging operations.

SECTION 02482

HYDRAULIC DREDGING

3.4 HYDRAULIC DREDGING OPERATION

- A. All dredging operations shall be overseen by the Owner's Engineer and shall be performed as specified on the Contract Drawings and herein.
- B. The Contractor shall not dredge within two hundred (200) feet of the Shipshewana Lake dam as indicated on the Contract Drawings. The Contractor shall flag the area two hundred feet back from the dam to remain undisturbed. Locations of flags shall receive approval from the Engineer prior to the commencement of dredging operations. The Contractor shall indicate that this area has not been included in the dredging activity on the post-dredging bathymetric survey. The Contractor shall be notified prior to the start of dredging operations if the area to be left undisturbed is changed in any way.
- C. The Contractor shall not dredge any areas where emergent vegetation (i.e. waterlilies) exists.
- C. Sediment Data: The sediment is approximately 60% solids based on moisture testing performed on ten discrete sediment samples collected by the Engineer. The sediment does not qualify as a hazardous waste and is suitable for disposal on adjacent farmland based on sediment analyses performed by the Engineer. The expected grain size distribution for Shipshewana Lake sediment is presented below:

Cobbles	Gravel	Sand	Silt/Clay
0 %	0 %	70.7 %	29.3 %

- D. Production Rate: The dredge shall transport the sediment to the sediment dewatering equipment through the dredge discharge pipeline at a rate of 800-1200 gallons per minute and a slurry solids concentration of 10-18%. A booster pump shall be used if necessary. The Contractor shall operate the dredge to ensure that the dredging pumping rate does not exceed the sediment dewatering equipment operation rate. With an exception for equipment failure, the disposal area preparation and dredging operation shall not exceed 210 working days.
- E. Misplaced Material: Should the Contractor, during the progress of the work, lose, dump, throw overboard, sink or misplace any material, plant, machinery or appliance, which in the opinion of the Engineer may be dangerous to users of the lake, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, to the Engineer or Inspector, and when required, shall mark or buoy such obstructions until the same are removed. The Contractor shall be responsible for removal of all obstructions.
- F. Disposal of Debris: Any debris located on the lake bottom with outside dimensions defining a volume greater than or equal to five cubic feet shall be disposed of at an acceptable landfill site by the Contractor. This shall include, but not be limited to, tires, metal objects, tree stumps and logs.
- G. Items of Value: Any items of value discovered by the Contractor during the dredging or dewatering operations shall be turned over to the County.

SECTION 02482

HYDRAULIC DREDGING

3.5 HYDRAULIC DREDGING MEASUREMENT

- A. Pre-Dredging Bathymetric Survey: The Contractor shall conduct a detailed pre-dredging bathymetric survey to determine the existing water depth in the lake with respect to the elevation of the top of the dam. The pre-dredging bathymetric survey must be performed by an Indiana-licensed surveyor or an Indiana Professional Engineer. Water depth measurements shall be taken with respect to the top of the dam and at 50 foot intervals on at least 15 transects. The locations of the transects shall be approved by the Engineer prior to commencing the pre- and post- bathymetric survey. The Contractor shall measure water depths using a 1 ½ inch diameter surveying rod, or equivalent as approved by the Engineer. The Contractor shall develop a pre-dredging bathymetric map of the lake bottom and submit it to the Engineer.
- A. Sediment Volume Estimates: The Contractor shall periodically conduct bathymetric measurements of the lake area dredged. From these measurements, the Contractor shall calculate the volume of sediment dredged in that time period. The Contractor shall provide the Engineer with a copy of the calculations for approval, prior to submission for progress payments. The Contractor shall use the same transects and measurement points for periodic bathymetric measurements as on the pre-dredging bathymetric survey. The Contractor shall measure water depths using a 1 ½ inch diameter surveying rod, or equivalent as approved by the Engineer.
- B. Final Examination and Acceptance: As soon as practicable after the completion of the entire dredging project, the Contractor shall, at his expense, have a post-dredging bathymetric survey performed on the lake, which will represent the actual post-dredging condition of the bottom of the lake. The post-dredging bathymetric survey must be performed by an Indiana-licensed surveyor or an Indiana Professional Engineer. Water depth measurements shall be taken at 50 foot intervals on at least 15 transects. Measurements shall be taken with respect to the top of the dam spillway and shall be performed using a 1 ½ inch diameter surveying rod, or equivalent as approved by the Engineer. The Contractor shall, at his expense, use this data to calculate the total volume of sediment dredged from the lake. The Contractor shall provide the Engineer with a copy of the calculations for approval, prior to submission for payment.

The Contractor shall also, at his expense, have the data obtained in the post-dredging bathymetric survey incorporated in an "as built" plan showing the final lake bottom contours at 2 foot intervals with adjacent shoreline and the areas which were left undisturbed. This "as built" plan shall be prepared and signed by an Indiana-licensed surveyor or a Indiana Licensed Professional Engineer. The preparation of the "as built" plan, six (6) copies of which shall be turned over to the Engineer when completed, shall be a prerequisite for acceptance and final payment as specified in Section 01700. Final payment shall not be made to the Contractor until such time as the "as built" plans have been approved by the Engineer. The cost of the "as built" plans is at the Contractor's expense and shall be included in the cost of the project.

++ END OF SECTION ++

SECTION 02520

RESTORATION OF NON-VEGETATED AREAS

PART 1 - GENERAL

1.1 SCOPE

A. Description of Work

1. All non-vegetated areas disturbed by the work shall be restored to their original condition by the Contractor, upon completion of final grading using appropriate labor, materials, tools, and equipment. Restoration work shall be done when weather conditions are suitable in the spring and the fall of the year. Restoration of non-vegetated areas shall be incidental to hydraulic dredging.

B. Related Work Specified Elsewhere

1. Regrading is included in Section 02200.
2. Restoration of vegetated areas is included in Section 02270 and the Soil Erosion and Sediment Control Plan.

1.2 SUBMITTALS

- A. Ten (10) days before beginning any restoration activities, the Contractor shall submit plans to illustrate the proposed restoration of any non-vegetated areas in accordance with Section 01300. These plans shall include proposed product names and compositions and shall be submitted to the Engineer for approval.

PART 2 - PRODUCTS

2.1 MATERIALS - GENERAL

- A. The Contractor shall restore all non-vegetated areas using materials identical or equivalent to those disturbed by the work.

PART 3 - EXECUTION

3.1 GENERAL DESCRIPTION

- A. The Engineer shall approve all Construction Drawings for restoration of non-vegetated areas prior to restoration activities.
- B. The Contractor shall restore all non-vegetated areas disturbed by his operation to their original condition with similar materials.
- C. The Contractor shall clean all restored areas and remove all surplus materials.

++ END OF SECTION ++

SECTION 02700
RETURN WATER PIPELINES

PART I - GENERAL

1.1 SCOPE

A. Description of Work

1. The Contractor shall furnish, install, maintain and remove pipe, fittings, couplings, accessories, pipe anchors and other items necessary to complete the return water pipelines as shown on the Contract Drawing and described herein. Any modifications the Contractor chooses to make to the return water pipeline alignment, as shown on the Contract Drawings, shall require the approval of the Engineer prior to the start of work.

B. Related Work Specified Elsewhere

1. Safety fencing is included in Section 01530.
2. Site Preparation is included in Section 02100.
3. Earthwork is included in Section 02200.
4. Soil erosion and sediment control and the riprap apron are included in Section 02270 and the approved Soil Erosion and Sediment Control Plan.

1.2 SUBMITTALS

- A. Ten (10) days before installation, the Contractor shall submit to the Engineer, for approval, the following: shop drawings illustrating the proposed return water pipe size and material and proposed return water pipeline alignment.

PART 2 - PRODUCTS

2.1 PIPING

- A. Piping shall be steel or a suitable alternative material as approved by the Engineer and shall be a minimum of 15 inches in diameter. The Contractor shall supply any piping appurtenances necessary to connect the return water piping to the dewatering equipment.

PART 3 - EXECUTION

3.1 INSTALLATION AND MAINTENANCE

- A. All types of pipe shall be installed in accordance with the manufacturer's most recent specifications, the latest revisions of the appropriate ASTM Standards, as last revised, and the A.S.C.E. Manual and Report on Engineering Practice.

SECTION 02700

RETURN WATER PIPELINES

- B. The Contractor shall install and maintain the return water pipeline from the sediment dewatering equipment to the outlet riprap apron in the alignment indicated on the Contract Drawings or at approved alternate alignments. The return water pipeline shall be approximately 700 feet long and shall be installed on ground level. Care shall be taken to ensure alignment both horizontally and vertically. Pipes shall not be laid in water. It shall be understood by the Contractor that filling under the return water pipeline may be required in order to establish the alignment indicated on the Contract Drawings or alternately approved. In these instances, the Contractor will install compacted fill along with the appropriate bedding shaped to fit the lower 1/3 of the circumference of the pipe barrel where needed.
- C. At all times, when the work is not in progress, all open ends of the pipes and fittings shall be securely closed so that no trench water, earth or other substance will enter the pipe or fittings. Any section of pipe already laid and found to be defective shall be taken up and replaced with a new pipe at no additional cost to the Owner.

3.2 PIPING ARRANGEMENTS

- A. Any proposed changes to or rearrangements of the return water piping by the Contractor to facilitate or ease installation will be considered. All changes will be at the expense, risk and liability of the Contractor. If the Contractor proposes to make any changes, the Contractor will be required to submit a detailed drawing to the Engineer showing location, slope, fittings, and all other pertinent data that will impact on the proposed drainage piping change. The Engineer will evaluate the proposed change before written approval is given for the Contractor to execute the proposed change.

3.3 REMOVAL

- A. The return water pipelines, including pipe anchors and all other pipeline items, shall be removed upon the completion of sediment dewatering. Any fill and bedding used for the return water pipeline shall be removed or regraded to match the surrounding grade and restored in accordance with Section 02270. All bedding material left in place shall be completely covered by soil and graded so as not to affect natural drainage patterns.

++ END OF SECTION ++

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Shipshewana Lake Restoration Project

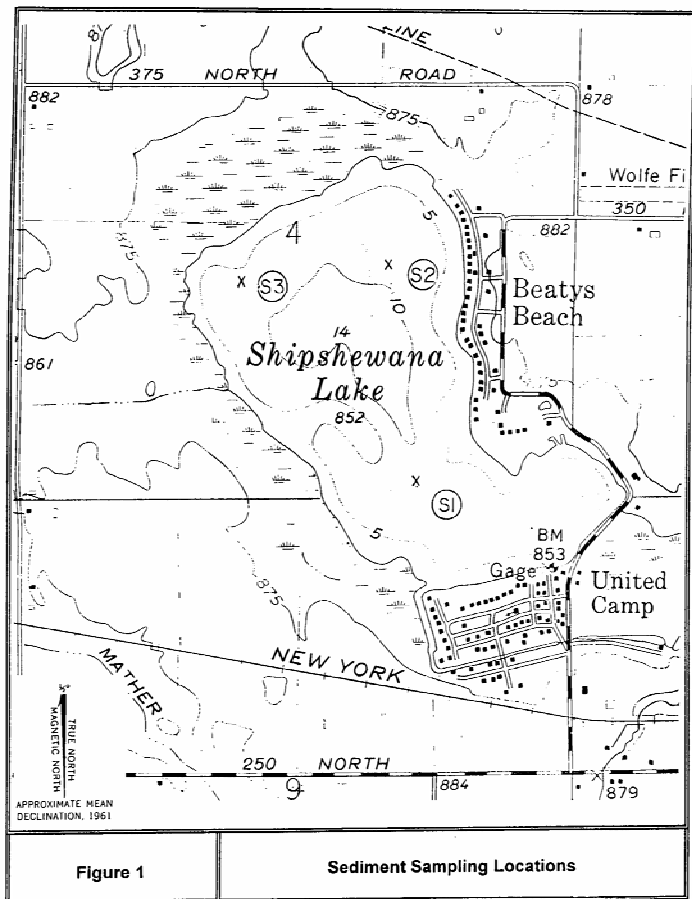
Hydraulic Dredging

Addendum #1

March 11, 1998

Note: This addendum consists of 5 pages.

1. Information in the specifications indicates that the sediments are 70% sand and 30% silts and clays. This information was obtained from a composite sample (consisting of three discrete samples) collected in 1995. The three discrete samples were collected at the three locations shown on Page ADD-2.
2. Soil testing was conducted in 1989 by International Science and Technology as part of a Diagnostic Feasibility Study for the lake. Three individual samples were collected and analyzed. Sediment characteristics of the three discrete samples differed from the 1995 composite sample and are provided on Page ADD-5 for your information.



3
 ADD-2

2.2 Sediment Characteristics

A composite sediment sample was collected during the October 1995 site visit by mixing three discrete sediment samples. Figure 1 shows the sediment sampling locations. The composite sample was sent to an analytical laboratory for analysis. Visual inspection of the core samples indicates that the sediments consist mainly of very dark brown/gray, flocculent, highly organic material and light gray, clayey marl material. The sediment sample was analyzed for the standard parameters of particle size distribution, hazardous metals, pesticides, herbicides, nitrate and phosphorus. The results of the analyses are presented in Table 2. Table 2 also compares the analytical results to generic soil cleanup standards. Based on the particle size distribution, the composite sediment sample is 70.7% sand and 29.3 % silt and clay. The sediment sample consisted of dark gray sand and organic silt.

2
ADD-23

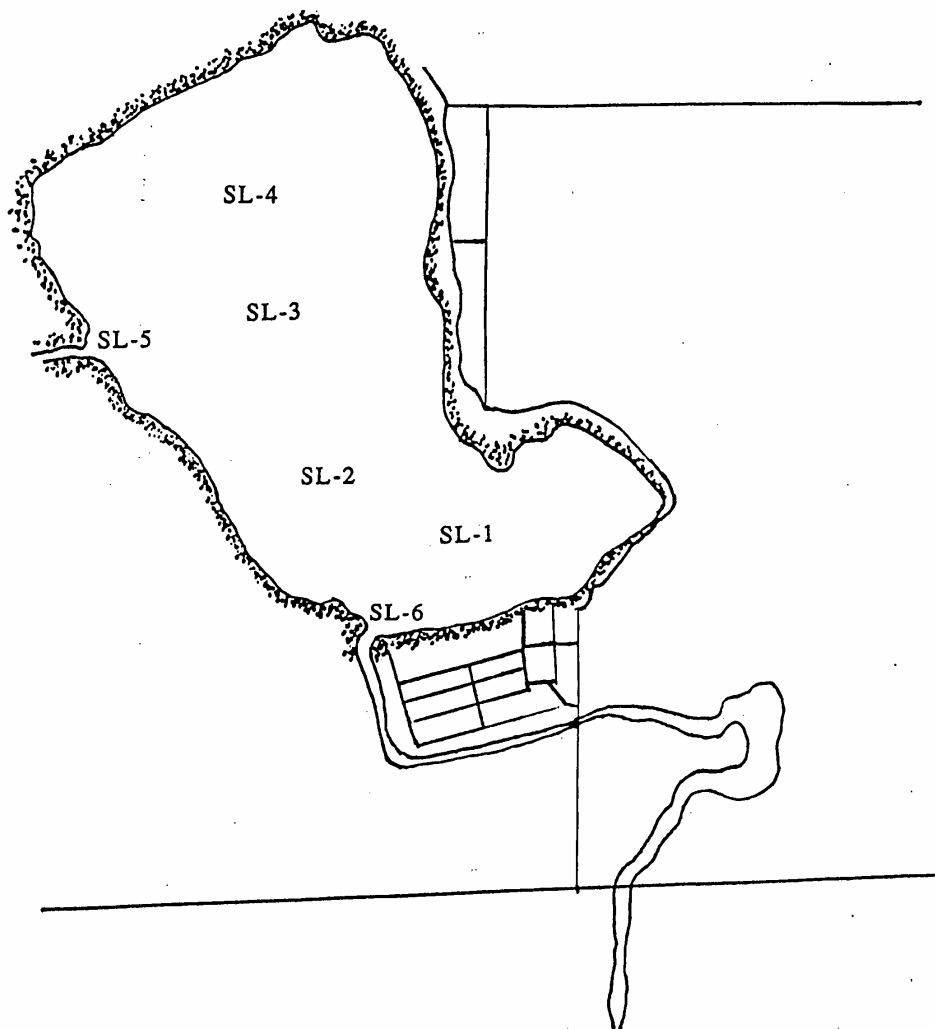


Figure 5. Locations of in-lake sampling stations.

ADD-4

TABLE 9. IN-LAKE STATION SEDIMENT CORES. Depth, percent organic matter, percent sand, and percent silt/clay of each visually distinct layer.

<u>STATION</u>	<u>VISUAL LAYER</u>	<u>DEPTH (cm)</u>	<u>% ORGANIC MATTER</u>	<u>SAND %</u>	<u>SILT/CLAY %</u>	<u>REMARKS</u>
SL-1	Surface	10	28.18	18.11	53.71	Entire core uniformly brown-gray; top layer more flocculant than bottom; appeared largely organic.
	Bottom	21	38.27	24.64	37.09	
SL-2	Surface	3	29.41	14.22	56.37	Top layer gray-green, very flocculant, and primarily dead algae; mid-layer gray, fine grained, and more compacted; bottom dark brown with identifiable plant fragments.
	Middle	26	32.04	7.61	60.35	
	Bottom	8	49.79	45.42	4.79	
SL-3	Surface	16	10.27	2.52	87.21	Top layer sand and some organic matter; no flocculant material; bottom entirely marl.
	Bottom	9	9.62	5.31	85.07	
SL-4	Surface	20	30.83	4.43	64.74	Only one visible layer; uniformly brown-gray; top more flocculant than bottom; appeared largely organic.

ADD-5

END OF ADDENDUM

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Shipshewana Lake Restoration Project

Hydraulic Dredging

Addendum #2

March 17, 1998

Note: This addendum consists of 1 page.

1. **Specification Section 02700, 2.1, A.** Pipe diameter should be minimum of 10" to correspond with Section 01025. Contractors should be aware that dewatering systems may operate at different rates which means that the return water rate may vary. Contractors should be confident that the return water pipe diameter is of sufficient size to handle the discharge from their dewatering equipment. Therefore, if a larger diameter pipe is required, you should base your bid on the larger size pipe. Fused high density polyethylene pipe for the discharge pipe is an acceptable alternative to steel pipe.
2. **Specification Section 02205.** This specification section should be deleted.
3. **Specification Section 02482, 3.4, 2nd C.** Based on laboratory results, the sediments had a moisture content of 90%, not 40% as indicated in the specifications. The moisture content test was conducted on one composite sample, not 10 discrete samples.

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Shipshewana Lake Restoration Project

Hydraulic Dredging

Addendum #3

March 20, 1998

Note: This addendum consists of 1 page.

1. **Bidding Documents, Special Requirements, 13. Wage Rates(SR-3).** The most recent minimum, average, and maximum wage rates for various occupations for the northeastern Indiana area can be obtained from the Indiana Labor Market Information Division of the Department of Workforce Development. The information can be obtained by calling (317)233-2658. This is an infobox phone number that is fully voice automated. Request Report #5009, and wage information from northeastern Indiana will be faxed to you immediately, free of charge. If you have any problems obtaining this report entitled "Job Service Openings and Starting Wages Report (April 1996 - March 1997), please call Marlene Martin.